The OIL WEEKLY

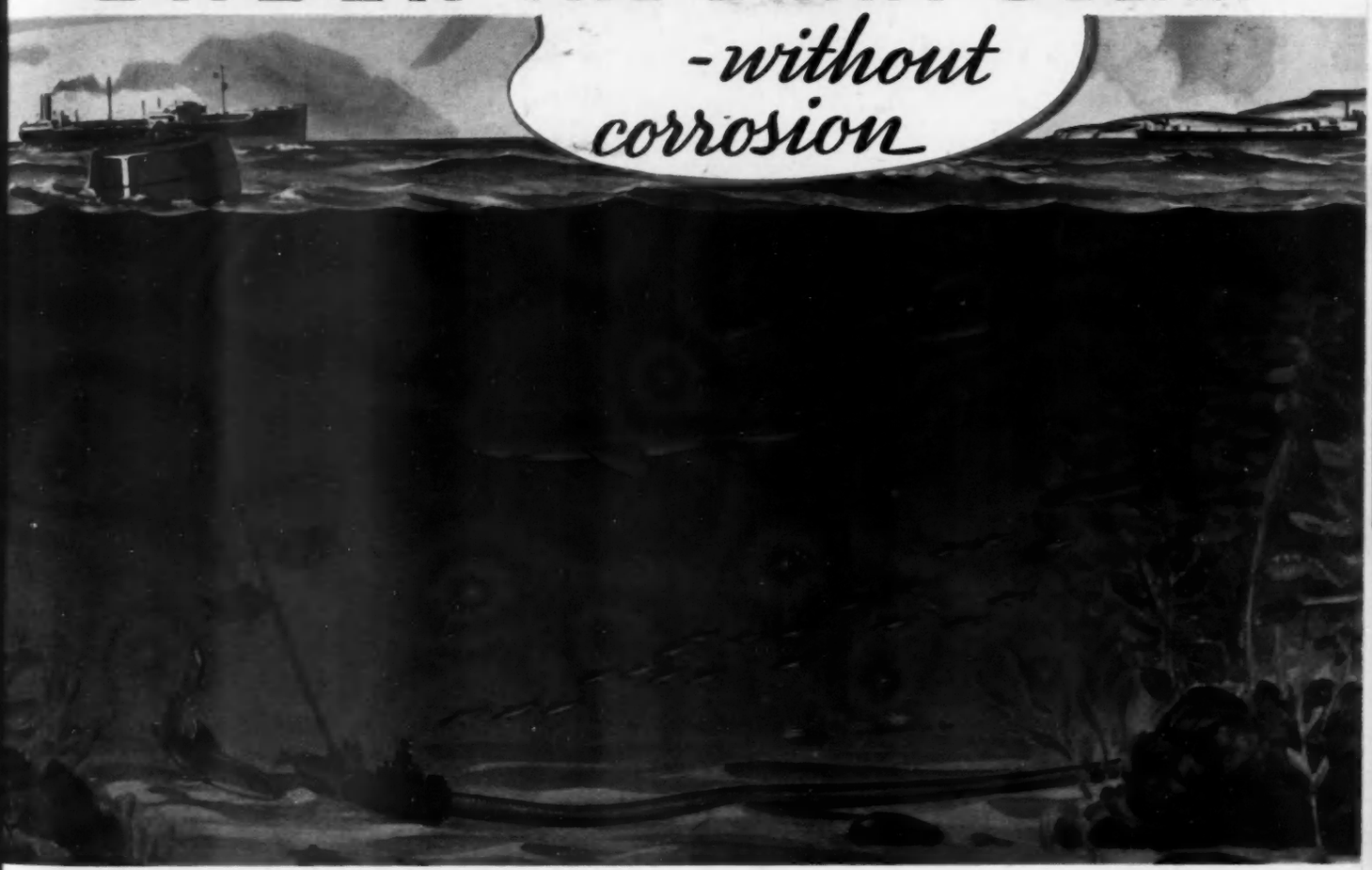
15c

OIL and GAS ENGINEERING

FOR OIL AND GAS PRODUCTION AND PIPE LINE DIVISIONS

THE WEEK'S NEWS INTERPRETED

UNDER THE BRINY OCEAN



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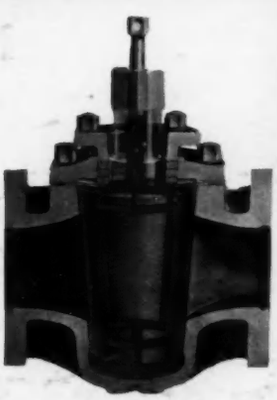

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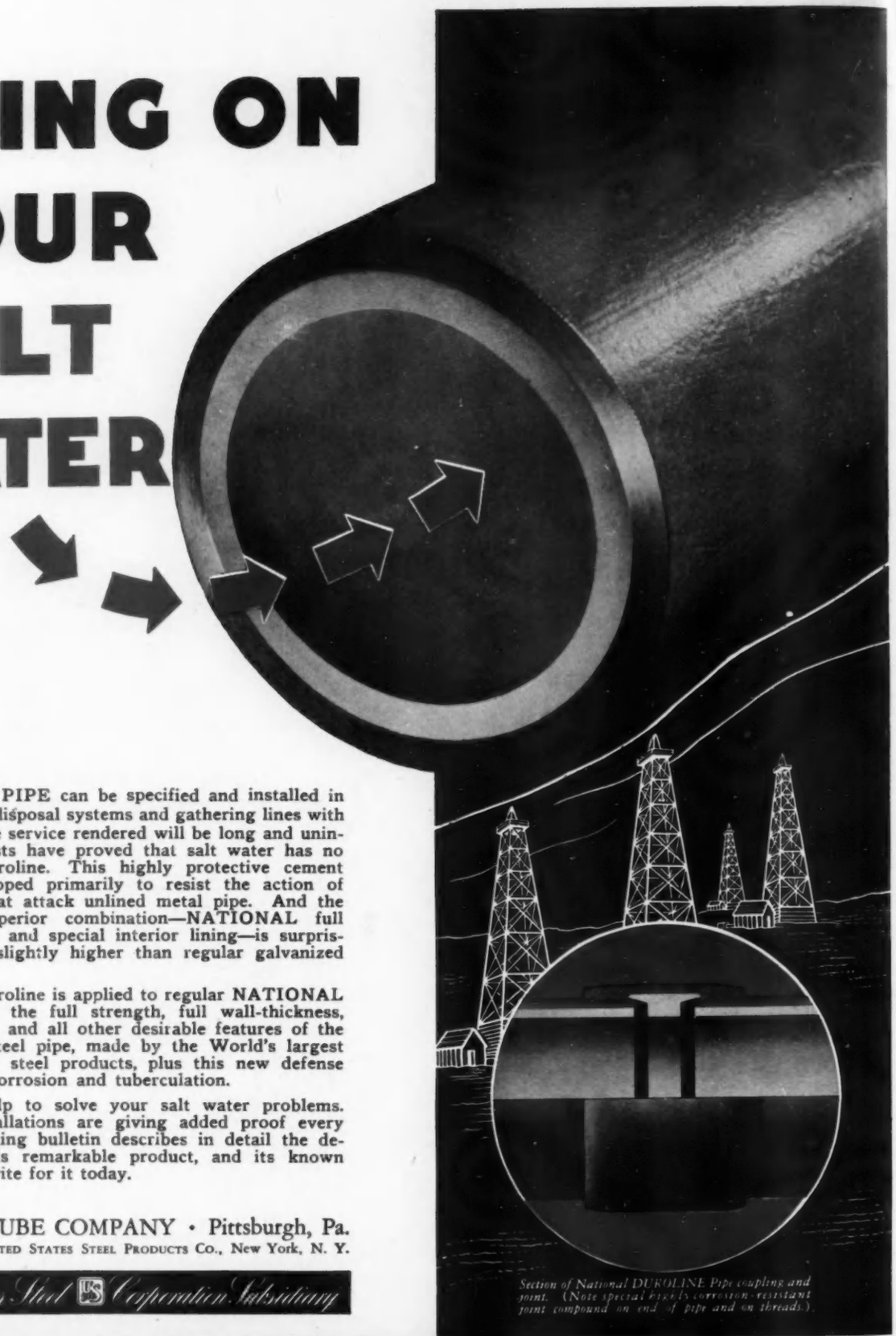

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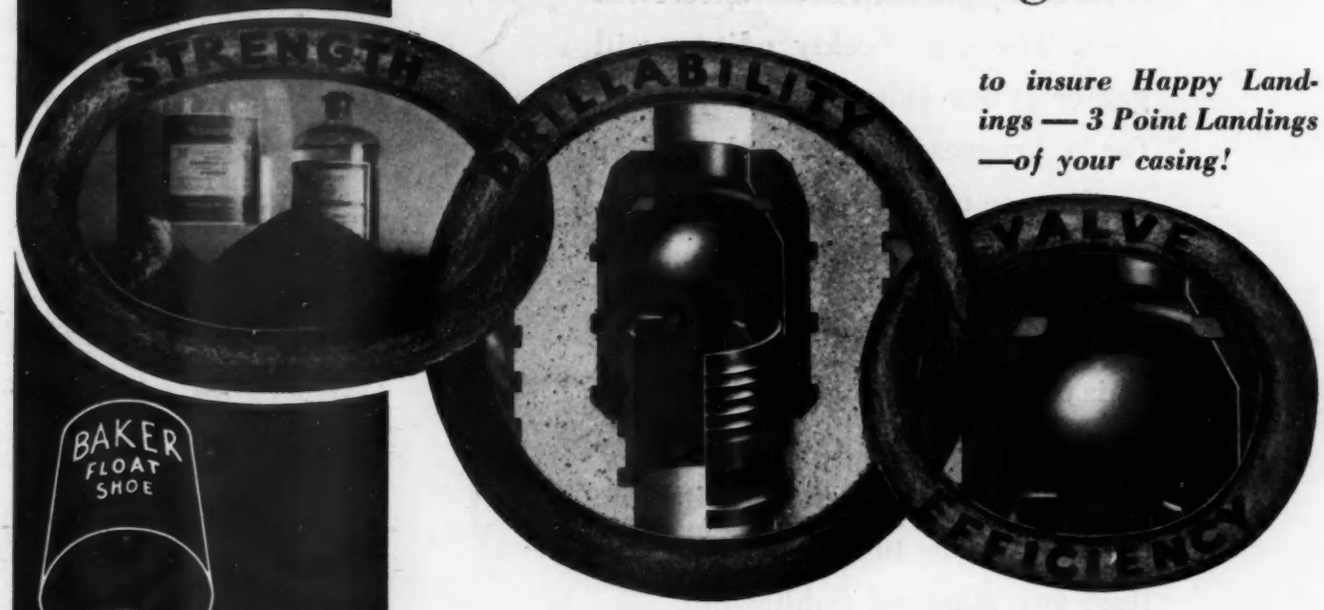

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The Oil Weekly's editorial program is carefully planned in advance. Next week The Oil Weekly editors will gather at our Houston headquarters for a progress report and further conference on the editorial program outlined at a meeting of our editors in January.

This careful planning is in large part responsible for the fact that 28 per cent more oil producers and pipe line men subscribe to The Oil Weekly than any other oil publication.

THE OIL WEEKLY

ENGINEERING « STATISTICS » THE WEEK'S NEWS

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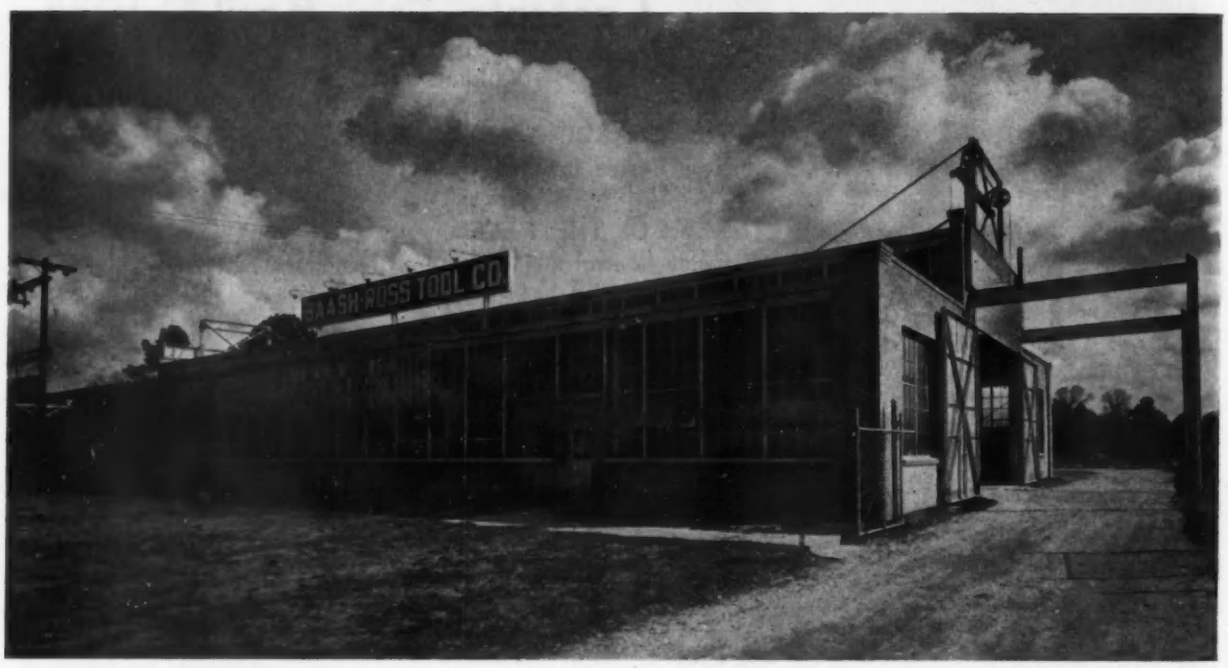

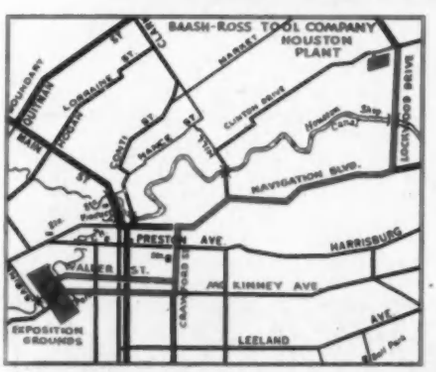

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VOLUME 77, No. 3 APRIL 1, 1935

THE OIL WEEKLY

FOR OIL AND GAS PRODUCTION AND
PIPE LINE DIVISIONS

ENGINEERING • NEWS • STATISTICS

The Changing Panorama

THAT Texas officials will attack the Thomas oil bill was disclosed by Chairman E. O. Thompson of the Texas Railroad Commission in a lengthy statement. Thompson declared charges that it is unconstitutional and unnecessary, will retard recovery and violates states rights.

The chairman of Texas' oil and gas body further stated that there is no appreciable hot oil, that the United States is producing a quarter of a million barrels per day less than it is consuming and exporting.

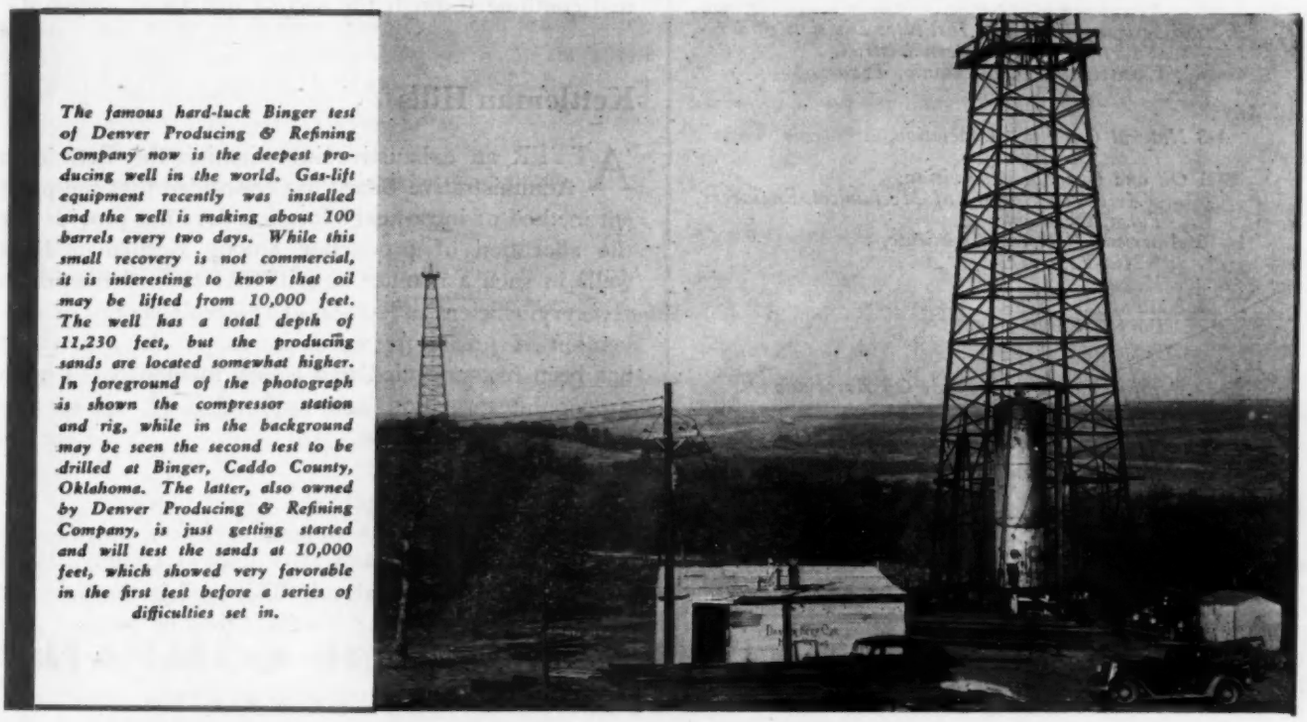
Page 12.

Production Allocation

IN summarizing the attempts made to obtain a satisfactory basis for proration it is found that nearly all of them possess merits, but that none possess all the fundamental requirements. However, it is logical to assume that engineering knowledge will enable the industry to distribute equity to every lease holder within a pool with greater accuracy. I. F. Bingham in this issue states that with two added new features the "Bottom-Hole Pressure Method" of production allocation might be the solution. Page 27.

Heaving Shale

CONSIDERABLE progress has been made toward the successful drilling of heaving shale, but it is still a serious operating problem. Experiments of the last 18 months have resulted in failure to find a drilling method that will handle the problem under all conditions, but progress has been made along a number of



The famous hard-luck Binger test of Denver Producing & Refining Company now is the deepest producing well in the world. Gas-lift equipment recently was installed and the well is making about 100 barrels every two days. While this small recovery is not commercial, it is interesting to know that oil may be lifted from 10,000 feet. The well has a total depth of 11,230 feet, but the producing sands are located somewhat higher. In foreground of the photograph is shown the compressor station and rig, while in the background may be seen the second test to be drilled at Binger, Caddo County, Oklahoma. The latter, also owned by Denver Producing & Refining Company, is just getting started and will test the sands at 10,000 feet, which showed very favorable in the first test before a series of difficulties set in.

lines. Oil companies continue to strive to find a solution to the heaving shale problem, their experiments of the past 18 months are reviewed in an article starting on page 19.

Soil Stress

IT has been found that soil stress exerts considerable influence on pipe line corrosion. A series of tests in California have shown that soil stress causes protective coatings to crack and be pulled from the surface of the pipe, and as a result it has been necessary to adopt specifications for pipe line coating to suit the soils and conditions encountered. Soil moisture largely determines whether or not pipe line coating will be affected adversely by soil stress. Page 33.

Texas Control

THREE important oil control bills were passed by the Texas House last week. The revised market demand bill permitting the Railroad Commission to curtail production in the state to a reasonable market demand was voted 112 to 1. The oil compact bill also was passed with only one dissenting vote. The third bill was passed without an objecting vote. It was a bill to prevent waste of gas in the Texas Panhandle. Page 12.

The Oil Man's Calendar

APRIL

2 *American Petroleum Institute, Division of Production, Pacific Coast District, Spring Dinner Meeting, Jonathan Club, Los Angeles.*

8-13 *Oil Equipment and Engineering Exposition, Houston, Texas.*

10-11 *American Petroleum Institute, Division of Production, Mid-Continent District, Amarillo, Texas.*

11-13 *Petroleum Industry Electrical Association, Dallas, Texas.*

18-19 *National Petroleum Association, Cleveland, Ohio.*

22 *American Chemical Society, New York.*

25-26 *American Petroleum Institute, Division of Production, Southwestern District, Plaza Hotel, San Antonio, Texas.*

MAY

1-3 *Natural Gasoline Association, Tulsa, Oklahoma.*

8-11 *Oil and Gas Power Division, American Society of Mechanical Engineers, Tulsa, Oklahoma.*

14-16 *American Petroleum Institute, Mid-Year Meeting, Mayo Hotel, Tulsa.*

20-21 *National Oil Scouts Association, Corpus Christi, Texas.*

JUNE

20-21 *Pennsylvania Grade Crude Oil Association, State College, Pennsylvania.*

SEPTEMBER

25-27 *National Petroleum Association, Atlantic City, New Jersey.*

NOVEMBER

4-5 *Independent Petroleum Association of America, Annual Meeting, Dallas, Texas.*

11-14 *American Petroleum Institute, Annual Meeting, Biltmore Hotel, Los Angeles.*

Code Effect

THE committee that investigated the effect of the oil code on small enterprises has turned in its report to Administrator Harold L. Ickes. It made a number of recommendations, including legislation providing for control of crude oil production and legislation prohibiting a single corporation from engaging in more than one branch of the industry. Page 11.

First Quarter Statistics

SUCCESSFUL balancing of supply with demand, coupled with a high demand resulted in generally satisfactory operating conditions within the industry during the first quarter of 1935. A material increase in production and drilling featured statistics for the first quarter. Production during the first quarter was 11.3 percent more than in the corresponding period of 1934, however, this was not excessive as shown by a stock decline of 30,000,000 barrels as compared with a year ago. Stocks during the three months of 1935, however, did increase 13,000,000 barrels, but this was in preparation for the summer demand season. Drilling operations averaged nearly 10 a day higher than a year ago. Today's markets are generally stronger and higher than those of a year ago. Crude prices remain practically unchanged, but the refined prices are somewhat improved. It is expected that these favorable conditions will continue through the second quarter. Page 42.

Kettleman Hills

AFTER an exhaustive investigation the Petroleum Administrative Board has concluded that the present method of intra-field allocation does not provide for the allocation of production among Kettleman Hills wells in such a manner as will tend toward maximum recovery, efficient utilization of reservoir energy or prevention of premature water intrusion. As a result it has been recommended that a new method based upon proper interpretation and application of sub-surface pressure data be sought. Page 16.

GULF Production Company is below 12,000 feet with J. T. McElroy 103, Upton County, West Texas, and is drilling ahead. This well is the first test in the world to reach 12,000 feet; thus in the past year the drilling depth record has been carried nearly 2000 feet deeper.

Year Begins Profitably

JACK LOGAN
Associate Editor

First quarter of 1935 brings favorable results for the industry in general, and second quarter also promises to prove profitable. Production branch of the industry has more satisfactory operations than the refining and marketing divisions.

OPERATIONS of oil companies proved generally favorable during the opening quarter of 1935. They were probably more profitable than those of the first three months last year, although that 1934 period had brought the highest earnings for the industry since 1930.

As the second quarter of the year opens, there is promise, moreover, that it will prove comparable with or better than the 1934 second quarter, which was similarly the most profitable second quarter since 1930.

Although earnings reports on the 1935 first quarter will not be available for some time, it is logical to assume they will show results comparable with those of last year. For prices have been about the same as during last year's first three months, and in some instances better; while volume of business has been appreciably greater, reflecting some increase of domestic consumption and substantially higher export demand.

Crude oil prices have been this year at the same profitable levels as in last year's first quarter. Product prices at the refineries have been slightly higher. Service station postings have also been generally better. (Last year's first quarter was marred by a long and costly gasoline price war in California and by depressed service station postings in Texas and adjacent states.)

Demand High and Supply Controlled

THE relatively high demand has been, of course, an important factor in promoting the generally profitable prices. But equally if not more instrumental has been the continued strict control of supply, which has been kept not merely balanced with but short of demand.

The restriction of supply has involved limitation of imports and rigid control of domestic production. The supplies from foreign and domestic fields have been so drastically curbed that steady and large reduction of stocks has been possible. The country's stocks of oils have been reduced more than 30,000,000 barrels since a year ago. They have been brought down to the lowest levels for about eight years. With demand higher, stocks lower, and new supply rigidly controlled, there has been fulfillment of every requisite for prices comparing favorably with those of last year.

In view of all the above considerations, in fact, it would appear that the markets have not fully reflected the favorable basic conditions; that further market improvement is perhaps in store.

Prospects Bright for Second Quarter

THUS the industry enters the second quarter of 1935 with especially bright prospects. That the new quarter may prove as profitable as the 1934 second quarter seems likely. That it may be even better appears entirely possible, in view of the continued rising demand, declining stocks, and strict control of imports and domestic crude production. Certainly, today's relation between demand and supply is such as to promote firm, if not advancing markets. And it is indicated that this favorable relation will continue to be maintained, as there is no serious threat of any weakening of the control situation.

Producers Operate Profitably

ALTHOUGH operations have continued profitable for the oil industry as a whole, there have persisted, as during 1934, disparities in results in the different divisions of the industry. With crude oil prices stabilized at favorable levels, production operations have been profitable. Earnings have consequently been satisfactory for small companies specializing in production and for integrated companies well fortified with producing properties. As evidence of the relatively favorable results for producers, there has been a comparatively large volume of drilling. In the opening quarter of this year, 14.3 percent more wells were completed in the United States than in the corresponding period last year. The three months' total this year was 4131

completions (oil wells, gas wells, and dry holes), compared with 3614 last year.

Refining and Marketing Less Lucrative

DESPITE some improvement over last year, prices at refineries, on the other hand, have continued generally unprofitable. Instead of showing profits along with the industry as a whole, the refining division has consequently had unsatisfactory results. Independent companies engaged only in refining have shown losses, while converting relatively high-priced crude into low-priced products. Integrated companies weak in producing properties and depending heavily on purchased crude have been similarly handicapped. (Lately, there has been some noteworthy improvement in refinery prices, and further increases are being hoped for.)

In the marketing division of the industry, results have apparently continued generally on a basis of about breaking even, some companies showing profits, others losses of varying extent. Similar results had been obtained by the marketing division in the first quarter of 1934.

Agitation for Higher Refinery Prices

THE subject of the relationship of earnings in the different branches of the oil industry has been thrust into bold relief in recent weeks, through various developments. And it appears that at last something is destined to be done about the matter. The hope is being entertained that a readjustment will take place whereby no one in the industry will be hurt, while the hitherto unfortunate refiners will be helped. There is, in other words, hope that crude prices will be maintained, if not raised; that product prices at the refineries will be advanced to profitable levels; and that retail prices will also be increased, to protect marketers.

As an alternative, the demand is being made, in behalf of independent refiners, that the federal government use its influence to force lowering of crude prices to permit profitable refining operations at current product prices. As regards that alternative, many stripper well owners protest that even the present crude prices are unprofitable.

Prices Studied as Markets Advance

THE recent developments that have concentrated attention on this whole matter are of the past few weeks' occurrence, although the disproportionate refinery prices have prevailed almost throughout the year and a half life history of the oil code. The relationship of crude, refinery, and service station prices came under increased scrutiny at the opening of March, when more effective East Texas control promoted rising tank car prices on gasoline. Producers began talking higher crude prices, and it was pointed out that product prices were still far too low to warrant serious hope for increased crude postings.

Committee Examines Price Ratios

LAST week the subject was pushed into even greater relief, through a report made to Oil Administrator Ickes by a special committee of oil men. The committee had been appointed in January to investigate the effects of the petroleum code on small enterprises in the industry.

The committee indicated it had received more complaints regarding violations of Rules 4 and 6 of Article V than of any other provisions of the oil code. Those provisions pertain (1) to selling below cost and (2) to the use by integrated companies of profits from their operations in one branch of the industry to subsidize their losses in other branches, to the detriment of competitors. Most of the complaints, it was said, alleged use of profits from low cost flush production or pipe line profits to subsidize unprofitable refining and marketing operations.

Corporate Divorcement Recommended

IT was further contended, consequently, that production profits should be prevented from trespassing into other branches of the industry. While various divorcement proposals were suggested to the committee, it made specific recommendations of its own. It favors new laws prohibiting a single corporation from engaging in more than one of the four branches of the industry: production, pipe line, refining, and marketing. The recommendation was for corporate separation only, without divorcement of management and operation.

The committee further recommended, as an immediate remedial move, that the oil code administration at once take certain action in response to the mentioned complaints. The administration was asked to require from large companies profit and loss statements on their operations in the four separate branches of the industry.

More Stable Crude Control Advocated

SO far as the producing division of the industry is concerned, the principal recommendation of the committee was that crude production control be so strengthened through legislation as to eliminate effectively not only overproduction but also the fear of overproduction. For either small or large companies to prosper permanently in any branch of the industry, the committee believes, there must be "a permanent, assured, and effective balance of crude oil supply and demand."

(*Continued on page 37*)

Crude Control *and Separation Recommended by* Code Investigators

Washington, D. C.—Legislation providing for full control of crude oil production and prohibiting operations by any corporation in more than one branch of the oil industry was recommended to Oil Administrator Harold L. Ickes March 27 by the special committee appointed January 11 to survey the effects of the oil code on small enterprises.

Other outstanding recommendations of the 43-page report in which was embodied the results of the committee's recommendations, were the adoption of regulations requiring integrated and partially integrated companies to file financial statements showing separately the activities in each of the four branches of the industry, and the exemption of stripper-well operators from the labor provisions of the code.

The committee, consisting of Parul Blazer, president of Ashland Refining Company, Ashland, Ky., chairman; Mason Houghland, president of Spur Distributing Company, Nashville, Tenn.; Sidney Swensrud, economist of Standard Oil Company of Ohio; H. B. Fell, executive vice president of Independent Petroleum Association of America, Ardmore, Okla., and R. E. Allen, secretary of the committee of California Oil Producers, Los Angeles, was asked not to disband following the filing of its report, but to continue in existence to advise regarding the progress made in remedying the conditions pointed out by it as detrimental to small enterprises.

The recommendations of the committee were unanimously approved with the exception of that prohibiting corporations from engaging in more than one branch, where it was explained that Mr. Swensrud felt that the questions involved were too complex to warrant the committee's making any final recommendations on the basis of the limited study which it had made, while Mr. Allen was of the opinion that even though segregation should be found to be in the public interest it would be impossible to accomplish such segregation in time to save the refiners now facing immediate extinction.

The report is the second to be made on the effects of the code on small enterprises, the National Recovery Board of Review, headed by Clarence Darrow, last June having made a similar investigation.

It is of interest that both the Darrow board and the Ickes committee recommended the splitting of the integrated companies now operating in more than one branch and the granting of increased representation on code boards to the smaller operators. Both groups also recommended stabilization of prices to avoid price wars, although the Darrow board proposed this to be done by the administrator while the committee would leave it to the industry.

Both the board and the committee recommended control of production, and both by means of legislation.

Control of production was the major suggestion of the committee, and its views are seen by observers as greatly strengthening the hand of Oil Administrator Ickes in his fight for the enactment of legislation. The subject was touched upon in the very first paragraph of the report, in a preface as follows:

"This committee has become convinced that no permanent benefits of material value to either small or large enterprises of the petroleum industry can be obtained under the code without a permanent, assured and effective balance of crude oil supply and demand, nor can stability of the industry and conservation of the oil resources of the nation be achieved without such balance."

More complaints have been received of violations of Rules 4 and 6 of Article V, relating, respectively, to selling below cost and to the use by integrated companies of profits from operations in one branch of the industry to subsidize losses in other branches, than of any other rules of the code, the committee declared, and small enterprise has suffered severely because of widespread infractions of these rules.

A "surprisingly large" number of letters were received recommending the segregation of operations of the industry into its four separate branches as a means of making the two rules effective.

"Many believe that if the operations of the large integrated and partially integrated companies were thus segregated into separate corporations, the requirement of separate Federal income tax returns is all that would be necessary to insure proper accounting and separation of profits between the different corporations," it was commented. "Others believe the complete divorcement of management and control of the separate corporations would be necessary to avoid continued violations of these rules."

The two rules appear to have constituted the principal attempts in the code to safeguard the position of non-integrated units engaged in only one or two branches of the industry and protect them from subsidized, destructive competition, the committee found. Little attempt, however, appears to have been made to enforce them or,

(*Continued on page 44*)

Outstanding recommendations made by the committee which investigated the effect of the oil code on small enterprises:

Legislation providing for control of crude oil production.

Legislation prohibiting a single corporation from engaging in more than one branch of the industry.

Opening of meetings of the Planning and Coordination Committee to the trade press.

Simplification of the code organization.

Increased representation on code bodies for small and non-integrated enterprises.

Elimination of code provisions apparently unenforceable or their segregation into a separate section with compliance by mutual voluntary agreement.

Submission by integrated companies of financial statements, separated into each of the four branches of the industry, showing whether profits in one branch were being used to subsidize losses in another.

Exemption of stripper-well operators on sub-marginal properties from labor provisions of the code.

A 56-hour week maximum for drilling employees.

Uniformity of provisions on rig building operations to relieve contractors.

Proper relation between prices for refined products and crude.

Filing of price formulae by dominant marketers.

Authority for refiners and marketers to enter into compacts between themselves, the former to restrict production below allocations to give more production to small companies and the latter to curtail service station building.

Application of crude production allocations to protect resources in pools of settled production.

Reduction of 25 percent in wages for drillers on wells of less than 1000 feet.

Thomas Bill Attacked *As Being Unconstitutional* By Texas Officials

Washington, D. C.—Attack on the Thomas oil bill by Texas officials when they appear before the Senate Interstate Commerce Committee April 16 will be predicated on charges that it is unconstitutional and unnecessary, will retard recovery and give rise to uncertainty in the industry, and violates the principle of sovereignty of the states, it was disclosed March 25 by Ernest O. Thompson, chairman of the Texas Railroad Commission.

In Washington in connection with other matters, Chairman Thompson took the opportunity to discuss the measure with various interested persons and issued a lengthy statement setting forth his position on the bill. Pointing out that the United States Supreme Court has repeatedly held that the Federal Government has no power to control production, manufacturing or mining within the boundaries of the several states, he charged the proponents of the Thomas bill with "seeking a legal way to do an admittedly illegal act" under the guise of regulating interstate commerce.

Further, he asserted, the President on April 3, 1933, refusing to declare a moratorium on the production of oil, wrote, in a letter to the governors of the oil producing states, that this was a matter within the sole authority and jurisdiction of the interested states.

"The states are doing an excellent job," Commissioner Thompson said. "The governors and their representatives of the oil producing states in their meeting at Dallas within the past several weeks, were unanimous in their opposition to Federal control of the production of oil. As has been pointed out by the United States Supreme Court in many instances, it is equally as important to preserve the sovereignty of the central government. In our dual form of government, the preservation of this sovereignty is essential to prevent failure of the whole. If one of the states attempted to regulate interstate commerce or attempted to exercise any of the exclusive functions of the Federal Government, the effort would be immediately frowned upon and effectively stopped as a violation of the essential principles of our system of government. Any effort by the Federal Government to usurp any of the privileges or functions reserved exclusively to the states should be as quickly frowned upon and as effectively prohibited."

Challenging statements that 95 percent of the industry favors Federal control, the Texas commissioner asserted that in the past six or eight months a vast majority of those who formerly favored Federal control are now vigorously opposing it.

"Even the most ardent supporters of the present Thomas Federal-dictator bill will not contend that hot oil in any appreciable amount is being run today," he declared. It has been reduced to an irreducible minimum. The price is firm at $1 per barrel. The United States is producing a quarter of a million barrels per day less than it is consuming and exporting. This deficiency is made up by imports and withdrawals from storage. There is less above-ground storage today than there has been in many years, the figure being approximately 32,000,000 barrels; less than four months' supply.

"There is no waste, there is no hot oil, and there is no over-production of crude petroleum. The various state governments and the Federal Government are at present working in complete harmony under existing statutes. The oil industry is making money. There is no chaos; there is no emergency; and there is no necessity for the passage of this drastic legislation."

Texas Legislators *Pass Three Important Oil* Control Bills

Austin, Texas.—The State Legislature moved rapidly last week to avert the prospect of the Federal Control of the oil industry of Texas.

The House passed three major bills each of which is intended to meet objections of those who have protested that the State of Texas was unable to control the industry properly, and have for that reason urged that it be declared a public utility.

On Monday the House passed the revised market demand bill which will permit the Texas Railroad Commission to curtail production in the state to the reasonable market demand, if such a plan seems advisable. The vote was 112 to 1.

Only one important amendment has been added to the bill as originally introduced. This amendment provides that any order of the commission which applies to reports of refined products must be applied to the entire state. Originally the orders issued under this clause of the bill could be limited to a particular area, or extended at the will of the commission. Hearing before the Senate Committee on State Affairs is scheduled for Tuesday, April 2.

Within an hour after this measure had gone through, the House passed the Oil Compact bill, which will permit Texas to join with other oil-producing states to limit the production of oil through the prevention of physical waste. There was only one dissenting vote against this measure.

One amendment was added which provides that in "requiring the consent of Congress to said compact, (it) shall not have the effect of or be construed as in any manner surrendering to the federal government any rights over or in the production, sale or transportation of oil or gas in the State of Texas."

On Wednesday the House passed the third important bill, largely prepared by Representative Sidney Latham, which is designed to prevent the waste of gas in the Texas Panhandle. There were 143 favorable votes, and not one representative voted against this measure.

An amendment added in committee which would have permitted the blowing of tail gas into the air from a plant in the Pledger field, Brazoria County, was stricken out in the House. Likewise stricken was an amendment which would permit the use of sweet gas for the manufacture of carbon black.

As finally passed, the bill provides for the use of sweet gas for light and fuel exclusively. No tail gas may be blown into the air, but sour gas may be used in the manufacture of carbon black.

Ratable taking is provided, based on acreage and potential, but the acreage factor is limited to the natural drainage area of an individual well.

The present bill, however, will probably be changed radically in free conference between members of the House and Senate, as sponsors of the measure agree that neither house is likely to agree entirely to the provisions of the bill as passed by the other.

Another important measure passed last Monday was a measure by Representative Charles Tennyson of Wichita Falls, which would make all gas pipe lines common carriers. This measure did not receive a vote sufficiently large to become immediately effective. It is not a part of the program to prevent federal control.

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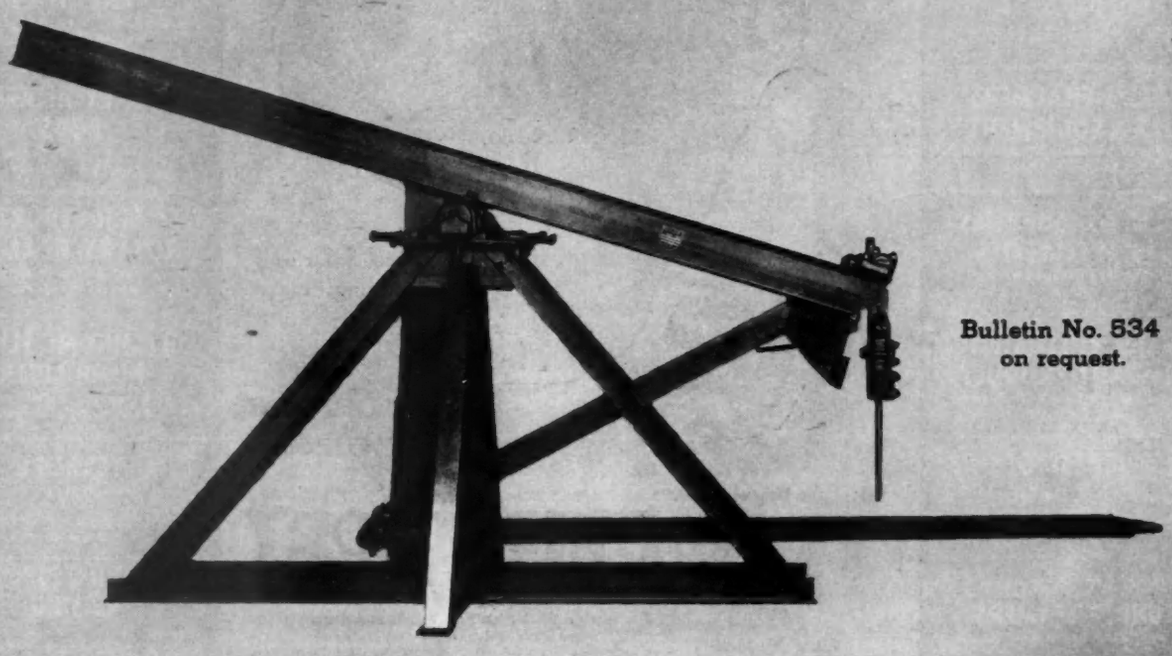

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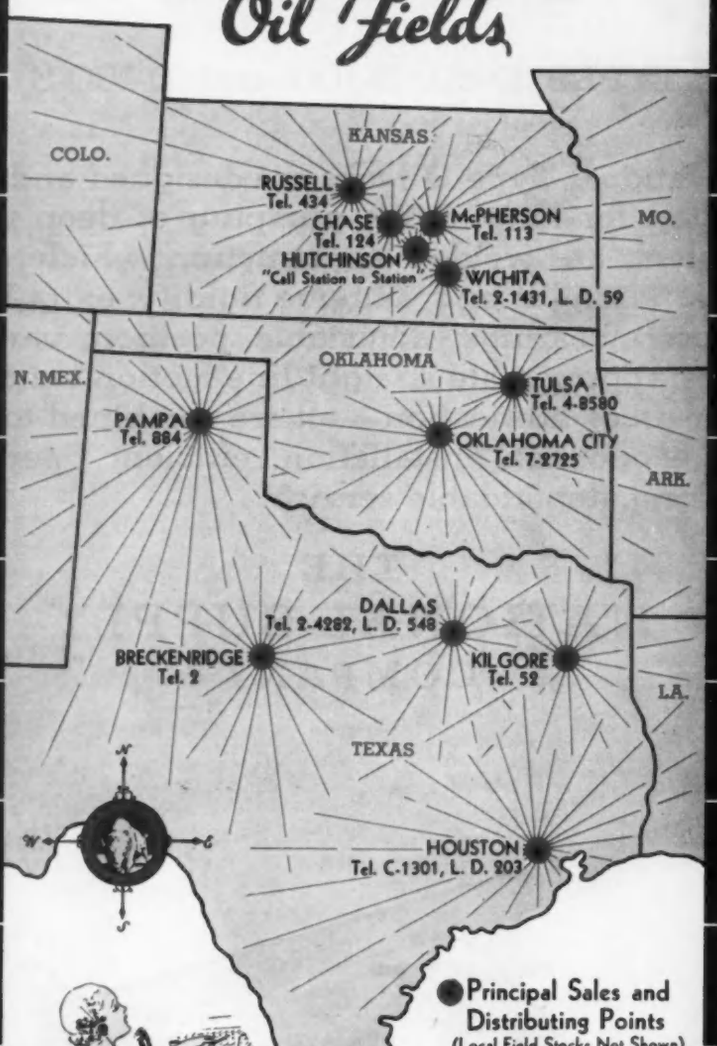

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MEN IN THE INDUSTRY'S NEWS

JOHN NICKLOS has resigned his position with Continental Oil Company to become associated with his brother, Ernest J. Nicklos, in the drilling contractor business. They already have contracts to drill a number of wells. John has been general superintendent in the Houston district for Continental Oil Company. Before his resignation 30 days ago Ernest was vice president in charge of production for Continental Oil Company.

G. FRANK MYERS, field superintendent for Unity Oil Company in the Spindle Top field, Jefferson County, was recently married to Miss Dorothy Taliaferro of Beaumont, Texas.

CAPTAIN R. L. BROOKINGS, J. E. Allen, H. F. Millon, N. G. Joseph and John Nelson, Standard Oil Company of Venezuela's aerial survey staff, have returned to Venezuela after a vacation in the United States.

E. R. FILLEY, manager of the Kansas-Oklahoma-Kentucky division of The Texas Company and J. E. "Jack" Flanagan, head of the land department in the same division, spent several days in Kansas looking over activities of that state. It is reported that The Texas Company will soon increase the size of its Kansas staff and probably the scope of its activities.

RALPH LINNION, production superintendent for H. F. Wilcox Oil and Gas Company, has been transferred from the Pampa, Texas, district to Hutchinson in Reno County, Kansas.

JOHN E. CONLEY, superintendent of production in the Mexia district for the Magnolia Petroleum Company, has been transferred from Mexía to Mirando City, Texas, to become assistant superintendent in Southwest Texas as result of the company having recently sold off all of its holdings in the Mexia, Corsicana-Powell and Wortham fields. C. A. "Heavy" Hill is in charge of the Southwest Texas district.

EARL A. TRAGER, a former Mid-Continent geologist and now chief naturalist in the national park service, appeared before the Tulsa Geological Society on Tuesday evening, March 26, in a discussion of the "Geology of Our National Parks." Motion pictures of the scenic wonders of the national parks were presented.

JOHN E. (Jack) SHATFORD, president of the Louisiana-Arkansas Refiners Association, last week was named national co-ordinator of refining for the petroleum industry by Secretary Harold L. Ickes. Mr. Shatford succeeds the late Howard Bennette of Tulsa, under whom he served as assistant co-ordinator. He had held the latter position for more than one year. Mr. Shatford is president of Ouachita Valley Refining Company of El Dorado, Arkansas, where he resides, although most of his time for the last year has been spent at Washington. He was named a member of the Planning and Co-ordinating committee of the National Oil Code Administration early in 1934 after having spent some time in Washington aiding in drafting of the code. Shatford entered the oil industry as a youth more than 20 years ago. He located in El Dorado when oil was first discovered there in 1921. Prior to locating there he was associated with Great Southern Refining Company at Lexington, Kentucky.

A. I. LEVORSEN, chief geologist for the Tide Water companies at Houston, and recently elected president of the American Association of Petroleum Geologists, spent several days in Tulsa following the association convention at Wichita.

CARL M. SMITH, land man for Skelly Oil Company in the Skellyville district near Pampa, Texas, and Frank A. Herald, consulting geologist of Fort Worth, were business visitors in Tulsa during the week.

J. A. de LANOY, Director of Purchases for the Asiatic Petroleum Corporation and Anglo-Mexican Petroleum Corporation in New York, sailed on a business trip for Europe on the S. S. Majestic, March 22. Mr. de Lanoy expects to return about May 1.

I. F. BINGHAM, professor in the petroleum engineering school of the University of Oklahoma, was one of the principal speakers at an American Society of Mechanical Engineers on Monday

LABOR CHAIRMAN »
Texas and New Mexico

Roy E. Carter, secretary of the Regional Planning and Coordination Committee No. 4, Fort Worth, has been appointed Labor Chairman for the States of Texas and New Mexico. Carter will continue in charge of the routine affairs handled by the Fort Worth district code headquarters in the absence of Chairman J. D. Collett, who was drafted last December to succeed Amos L. Beaty, resigned, as chairman of the Planning and Coordination Committee, Washington, D. C. As labor chairman for the above two states, Carter will handle all matters pertaining to labor in all branches of the oil industry. He has appointed Phil Daviss, Corsicana, Texas, as field secretary. Carter has been secretary for Region No. 4 since October 9, 1933, having qualified for the position through two years of service immediately prior to that date as office manager of the Texas Oil & Gas Conservation Association, and more than six years of duty with major and independent oil companies in Wichita Falls. He is a native of Bowie, Texas.

ROY E. CARTER

evening, March 25. The subject was rotary mud fluids, a problem which is now receiving considerable attention both in field and laboratory. Glenver McConnell, Shell Petroleum Corporation, spoke on, "Capital Investment, Depreciation and Obsolescence."

W. K. ATCHESON, superintendent of motor transportation in the southwestern division of Pure Oil Company, is reported rapidly recovering from a major operation recently performed in a Tulsa hospital. He is president of the Petroleum Motor Transport Association of Oklahoma.

JAMES MENEFEE arrived in Venezuela recently for work with Standard Oil Company of Venezuela's seismograph parties.

A. R. NUTTER, manager of the Oil Well Supply store here for the past three years, will be transferred April 1 to Oil City, Pennsylvania, where he will be employed in the Oil City division office. He will be succeeded in Mt. Pleasant by F. D. Smith, who comes here from the Oil City offices.

A. C. MATHENY, who has been geological scout for Sinclair Prairie Oil Company, Houston, has been transferred to the Tyler district in East Texas.

W. E. GROGAN, driller, and F. W. Lyon, transportation foreman, employed by Standard Oil Company of Venezuela, are now in the States on vacation.

RUSH GREENSLADE, vice president and manager of Gypsy Oil Company and Gulf Pipe Line Company of Oklahoma, is back in his office after a six weeks' tour of southern Europe.

E. L. ESTABROOK, Eugene Stebinger and W. C. Shutts of Standard Oil Company of New Jersey, recently visited that company's holdings in Venezuela.

A. W. ROGERS, a director of North Venezuelan Petroleum Company, Ltd., arrived in La Guaira for a visit in connection with his company's operations in eastern Falcon, Venezuela.

HAROLD DUCE of Denver, Colorado, was recently employed by Standard Oil Company of Venezuela and assigned to the general offices in Caripito.

H. L. CHAPMAN of Tulsa, Oklahoma, recently returned to Venezuela after a vacation in the States.

New Potential Basis *Will Be Established at* Kettleman Hills

Washington, D. C.—Holding that the oil production allowables of Superior Oil Company and Amerada Petroleum Corporation in the Kettleman Hills North Dome field "have been neither unreasonable nor inequitable, when the oil production from the appellants' tracts is considered in relation to the oil output of the Huffman area of the field" and other factors, but agreeing that the companies may have suffered from application of the intra-field production allocations, Oil Administrator Harold L. Ickes on March 28 authorized the Petroleum Administrative Board to determine the amount of oil, if any, the appealing parties or others have lost with a view to adjustment.

An exhaustive investigation of the situation, outlined in a lengthy report, led the board to conclude that the present method of intra-field allocations does not provide for the allocation of production among wells in such manner as will tend towards the maximum recovery of oil, efficient utilization of reservoir energy or the prevention of irregular and premature water encroachment, and it was recommended that a new method based upon the proper interpretation and application of sub-surface pressure data should be sought at the earliest opportunity.

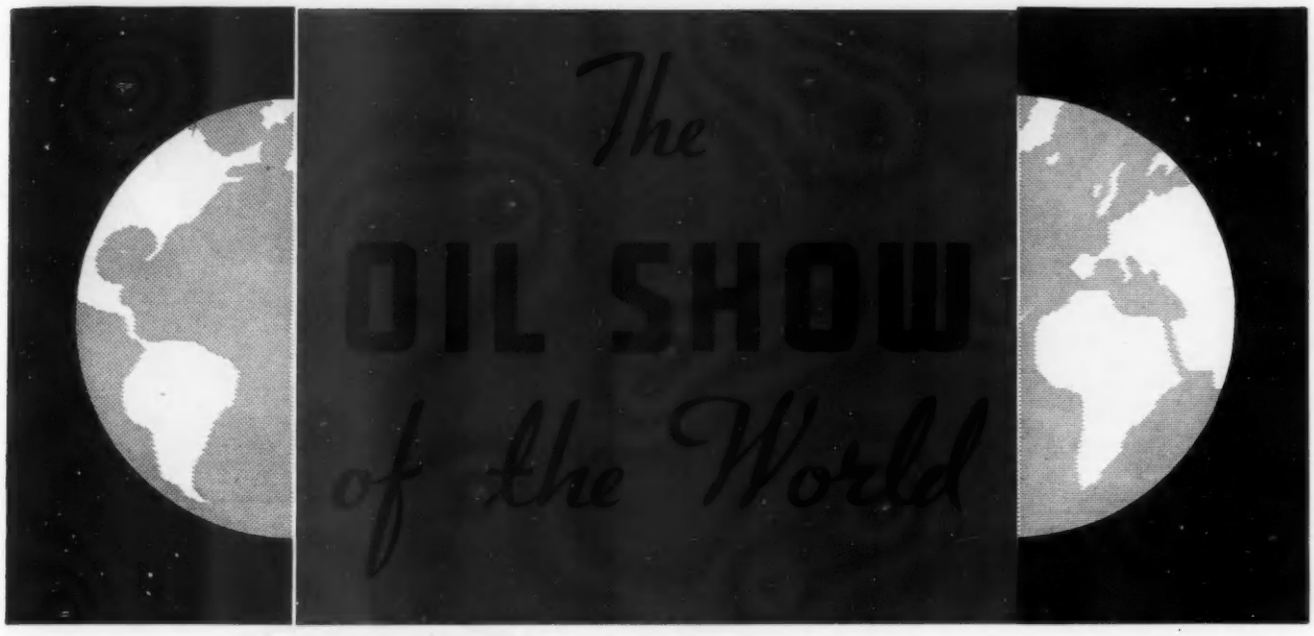
Pending the development of such a plan, and effective April 1, the administrator ordered that "each producing well in the field capable of such production shall receive a minimum allotment determined by exactly the same method used for all other wells in California in accordance with approved recommendations made by the agency designated to compile production quotas in California. Since the purpose of such minimum allotment is to assure recovery of actual lifting cost, no well shall receive a minimum allotment for one month exceeding in amount the actual oil production of the well during the preceding month of record. The minimum allotment is in effect the wages of a well based upon and limited by its performance and shall be assigned to each producing well prior to the further allocation of production as herein described.

"As nearly as may be practicable or consistent with conditions as they are, each separate zone and source of supply shall be segregated for allocation purposes. If individual zones may not be practicably subject to separate classification, then suitable pool groups may be established, the intent of this requirement being to protect those wells which may be producing from separate sources from allocation competition with wells producing from other sources.

"In order to provide a proper equilibrium between withdrawals from distinctive areas and to provide a ready means for the comparison of such withdrawals, the Oil Umpire for the Central Committee of California Oil Producers shall divide the field into unit areas which shall be twice the average area of a well space as per the present established well spacing pattern. The unit area in the North Dome field shall therefore be a square 40-acre tract based on legal subdivisions and each of these tracts shall be designated separately as to their location in the 'gas-cap' (including 'localized gas-caps') and 'black oil' areas in the several producing zones or zone groups. The rate of the average volumetric withdrawal of oil and gas per tract in the 'gas-cap' (including localized 'gas-caps') area cumulatively over progressive three months periods shall not exceed the rate of average volumetric withdrawal of oil and gas per tract in the 'black oil' area. Until proper conversion factors are determined on the basis of subsurface conditions prevailing in each tract, 1000 cubic feet of gas at atmospheric pressure shall be considered the equivalent in volume to one barrel of oil in terms of reservoir space.

"After the specified minimum well allotments and such special allotments as may be authorized by the field committee on account of exceptional water conditions have been deducted from the field allotment, the balance of the field allotment shall be divided among the producing wells of the field in accordance with the relative productivity of each producing well as modified in the allocation formula. By relative productivity is meant the comparative ability of a well to withdraw oil from the producing formations without causing excessive pressure gradients or other conditions conducive to waste. The measure of productivity shall be the productivity index which is defined as the number of barrels of oil produced per pound differential in pressure between static and flowing sub-

(*Continued on page 45*)



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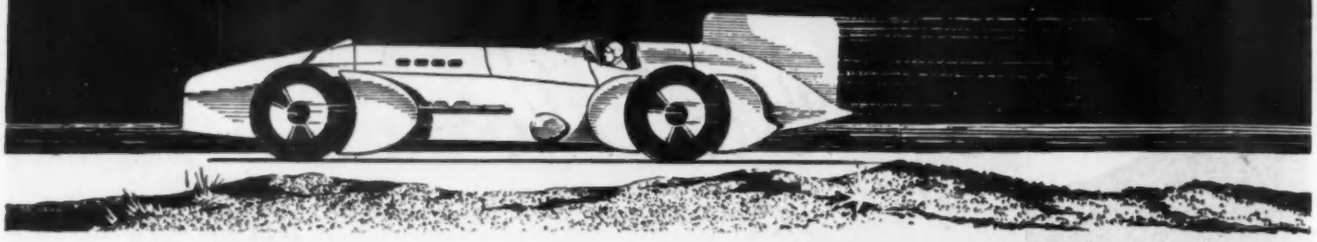

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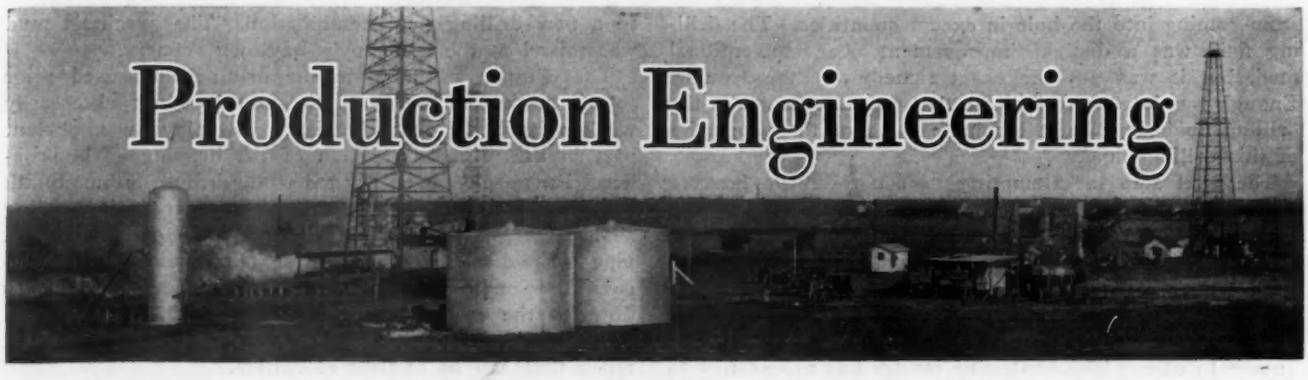


Progress Made on Heaving Shale Problem *...But It Is Not Solved*

BRAD MILLS
Associate Editor

THE fact that a number of promising districts along the Gulf Coast remain partially developed is evidence that heaving shale continues to be a serious operating problem. Development in a number of wildcat areas and on a large number of flank leases in proved fields would follow the discovery of a successful method for handling troublesome shale formations.

SEVERAL Gulf Coast producing companies are striving to find the solution to the heaving shale problem. It is conceded that the advantage will rest with the operator that solves the problem first. Some measure of success already has accompanied the efforts of several companies that took the lead in research and experimental work in a dozen fields and wildcat districts, but abandonment of wells because of heaving shale still is a common occurrence along the Gulf Coast.

The experiments of the past 18 months have resulted in failure to find a drilling method that will handle heaving shale under all conditions. Some progress has been made along a number of lines, but no broad claims have been advanced. The action and nature of heaving shale are so varied that the most successful practice in one field has failed in another.

Shale strata or deposits are seldom uniform, and because of this fact an effective remedy for drilling all types of heaving and caving shale formations has not been found. Unbroken shale bodies lying at a sharp angle have been handled successfully on a number of flank leases in salt dome fields, but application of the method to badly-broken shale bodies lying at the same angle and located in other fields has not been successful.

The heaving shale problem definitely involves both mechanics and chemistry. Best results have been obtained where both factors have been considered. A number of changes in equipment design, particularly in the mud circulating system, reflect the influence of efforts to fight heaving shale through the mechanical route. Use of pressure drilling equipment also is a tribute to the importance of mechanics.

Humble Experiments

During the past year Humble Oil & Refining Company has been a leader in efforts to conquer heaving shale through the chemical route. This company has believed for some time that proper application of drilling fluid is one of the most important factors in drilling heaving formations, and has spent large sums of money in practical experiments. Considerable progress has been made, but no remedy has been found. In attacking the problem with chemicals, shale characteristics have been considered. The importance of mechanics has been recognized, but through the use of special drilling fluids, control of the shale and positive recovery of the tools are the chief objectives.

The net outcome of the company's experiments in drilling Simms-Smith 80, deep test in the Goose Creek field, has been the failure to find a drilling fluid that solves the heaving shale problem. Much has been learned and considerable progress has been made, but no "magic door" has been opened. The company has made no definite claims toward advancement, but holds to the belief that the ultimate solution to the problem will include a drilling fluid of appropriate characteristics.

Before location was made for Simms-Smith 80, Humble Oil & Refining Company considered practically all known angles of the heaving shale problem. The final decision before drilling started was that the principal method of attack should be through the drilling fluid. No definite formula was approved in advance, and it was agreed that it might be necessary to experiment with a number of drilling fluids as drilling conditions changed. Mechanics was considered and recognized, but it was placed secondary to chemistry, via the drilling fluid.

When heaving shale was encountered below 5000 feet in Simms-Smith 80, a mixture of native mud, quebracho, caustic soda, bentonitic material, and weight material was used as drilling fluid. The combination was fairly effective, but the shale caused trouble at different levels. It was possible with this mixture to control weight and viscosity, but it lacked properties that fully prevented the shale

from coming into the hole in excess quantities. The drilling fluid was a distinct improvement over conventional mud, but it was not the exact remedy for the trouble. Enough was learned to indicate that radical changes in the drilling fluid should not eliminate some of the properties of this drilling fluid.

The next step in attempting to penetrate the heaving shale at Goose Creek was the mixing and use of a special drilling fluid that has been termed a synthetic mud. It consisted principally of a bentonitic material as a filler. El Paso clay, caustic soda, quebracho and weight materials.

The materials used in this synthetic drilling fluid were selected because of the several advantages they were known to offer. The bentonitic matter has a tendency to retain the water originally absorbed in the mud, and obviously does not permit loss of excessive free water into the formation. The El Paso clay adds weight up to a certain limit, and also makes a good filler. It absorbs water readily up to a certain limit. The quebracho and caustic solution helps to control the viscosity of the drilling fluid, and adds a "slick" property that is very useful from a mechanical standpoint. The weight materials were used simply to add weight and to condition the mud, and not to prevent a blowout.

The synthetic mud was used for some time and possibly offered a number of advantages over the conventional drilling fluid, particularly in the prevention of sticking and freezing of drill pipe and tools. However, it was not an indispensable product, and was replaced with the drilling fluid used previously. The synthetic mixture easily was conditioned and maintained, but a less elaborate drilling fluid was substituted when it became apparent that the more conventional mud might do the work as well. The experiment also gave some idea of the reaction of shale to a new drilling fluid combination. The synthetic mud was mixed at the company's Baytown refinery.

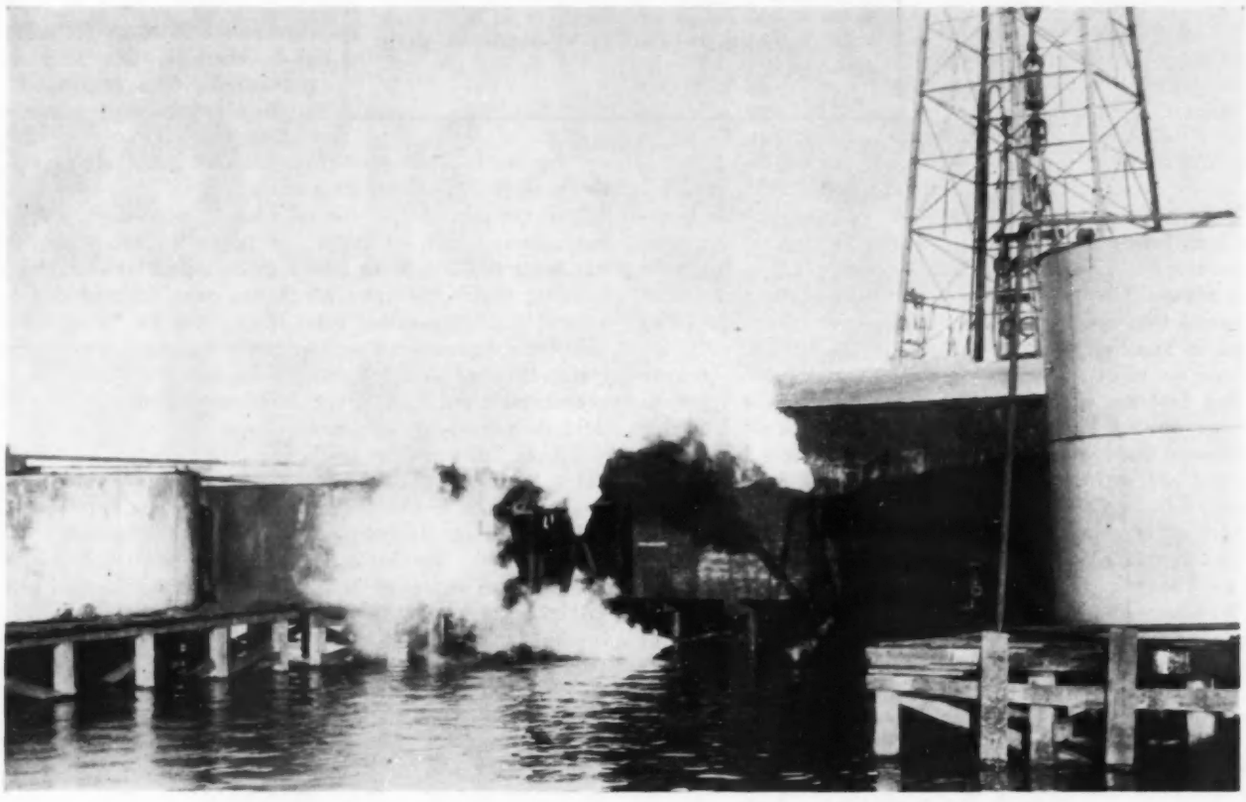
The company's return to the drilling fluid used prior to the mixing of the synthetic fluid does not necessarily weaken its belief that chemistry will play an important part in the ultimate solution of the heaving shale problem. Enough has been learned while drilling Simms-Smith 80 to prevent freezing the drill pipe or tools in heaving shale strata. The drillers always are able to free the drill pipe by one of several operations that have proved successful. Condition of the drilling fluid has had much to do with the ease or difficulty with which the pipe and tools have been recovered, and the company has learned much that can be applied elsewhere.

Yount-Lee Program

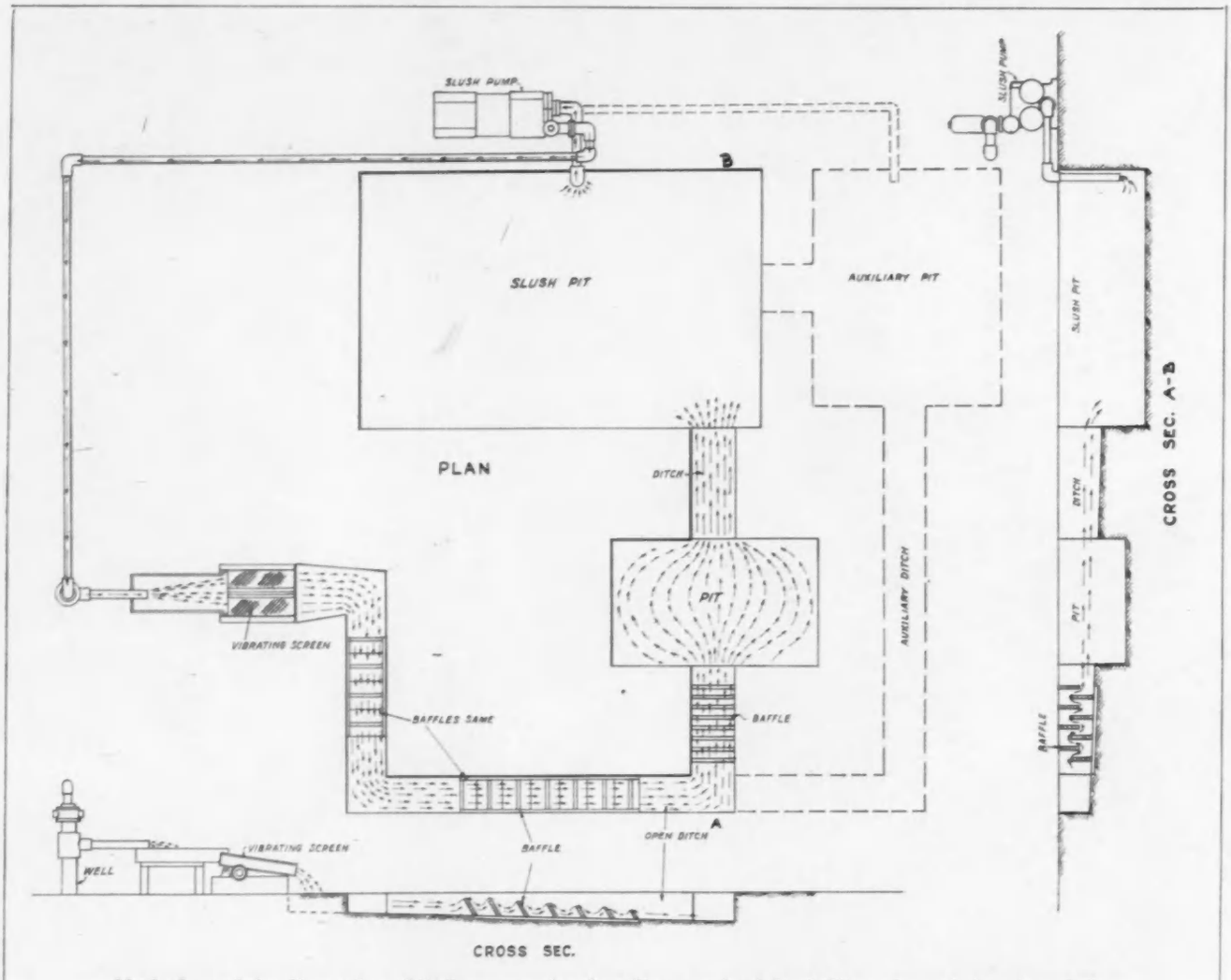
Yount-Lee Oil Company has been very successful in handling heaving shale in a number of Gulf Coast fields. This company has been a pioneer in the use of chemicals, and maintains a complete laboratory in connection with its research department. Chemistry is applied on the theory that each type of shale requires a different treatment, and that each field presents its own problems.

The company believes that the primary function of chemicals in the drilling fluid is to treat the shale so that it will remain in place during drilling operations and after the pressure has been removed. Both organic and inorganic chemicals are used in the 22 combinations or formulas used in fighting heaving shale. The formulas are numbered and applied as conditions seem to demand.

Geology plays a very important part in the selection of a chemical formula used in the drilling fluid. The reaction of the various strata to different chemicals is considered, both from laboratory tests and the known characteristics of the formations. The company has proved favorable



Reserve mud tanks at left used by Pure Oil Company in drilling Yount-Lee 12, deep test in the Sweet Lake field.



Method used by Yount-Lee Oil Company for handling mud while drilling through heaving shale.

and unfavorable shale reactions to certain chemicals by experimentation and substitution during drilling operations.

Yount-Lee Oil Company has developed a program that calls for action at 500 or 600 feet above the heaving shale. The hole is placed in condition and the drilling fluid conditioned far above the level at which the heaving shale is expected. The company discovered several years ago that it was dangerous to await entry into the shale before attempting to diagnose the case. Geological conditions are studied and cores examined above the shale strata.

The angle at which the shale lies is determined by coring. An effort is then made to counteract the angle of repose. The chemical formula is changed each 10-degree change in the pitch of the shale strata. A chemical combination that will control heaving shale lying at an angle of 35 degrees from vertical might not prove effective in handling shale lying at an angle of 50 degrees. The intensity of the reaction of the chemical or shale may increase or decrease as the angle changes.

The 22 formulas require 55 chemicals. The formulas are numbered in code, but it is not the company's intention to use extreme secrecy. Many of the chemicals are used by other companies, and a number of the formulas roughly parallel those adopted by other operators. The variety is far greater, however.

Percentages of solids and free water in the drilling fluid are controlled during drilling in heaving shale. The solids are held down to three percent, while a three percent content of "free" water is considered both high and dangerous. The intention is to eliminate free water.

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The mud circulating system on the surface includes a vibrating screen, a series of baffles, a retardation pit and a primary mud reservoir. The net drop between the vibrating screen and the main reservoir is six feet. One series of baffles includes a number of boards placed at an angle of 45 degrees from the vertical. The mud runs over these boards with a shoal effect and some of the undesirable solids are removed at this point. Another type of baffle in the circuit includes vertical boards that force the mud to run under and over the ends. This agitation also settles out some of the solids not wanted in the flow. The retardation pit is essentially a spiral ditch, the chief function being to settle out solids. A smaller mud pit is used when

from coming into the hole in excess quantities. The drilling fluid was a distinct improvement over conventional mud, but it was not the exact remedy for the trouble. Enough was learned to indicate that radical changes in the drilling fluid should not eliminate some of the properties of this drilling fluid.

The next step in attempting to penetrate the heaving shale at Goose Creek was the mixing and use of a special drilling fluid that has been termed a synthetic mud. It consisted principally of a bentonitic material as a filler. El Paso clay, caustic soda, quebracho and weight materials.

The materials used in this synthetic drilling fluid were selected because of the several advantages they were known to offer. The bentonitic matter has a tendency to retain the water originally absorbed in the mud, and obviously does not permit loss of excessive free water into the formation. The El Paso clay adds weight up to a certain limit, and also makes a good filler. It absorbs water readily up to a certain limit. The quebracho and caustic solution helps to control the viscosity of the drilling fluid, and adds a "slick" property that is very useful from a mechanical standpoint. The weight materials were used simply to add weight and to condition the mud, and not to prevent a blowout.

The synthetic mud was used for some time and possibly offered a number of advantages over the conventional drilling fluid, particularly in the prevention of sticking and freezing of drill pipe and tools. However, it was not an indispensable product, and was replaced with the drilling fluid used previously. The synthetic mixture easily was conditioned and maintained, but a less elaborate drilling fluid was substituted when it became apparent that the more conventional mud might do the work as well. The experiment also gave some idea of the reaction of shale to a new drilling fluid combination. The synthetic mud was mixed at the company's Baytown refinery.

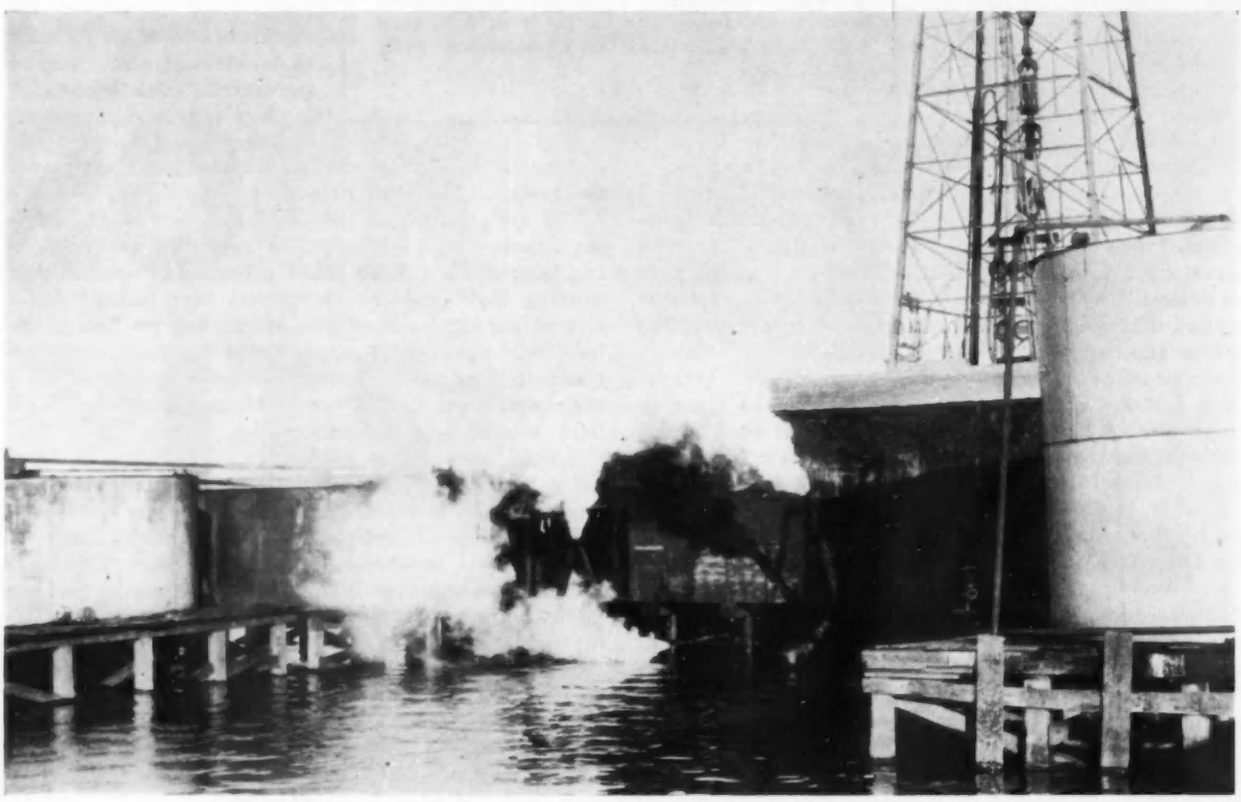
The company's return to the drilling fluid used prior to the mixing of the synthetic fluid does not necessarily weaken its belief that chemistry will play an important part in the ultimate solution of the heaving shale problem. Enough has been learned while drilling Simms-Smith 80 to prevent freezing the drill pipe or tools in heaving shale strata. The drillers always are able to free the drill pipe by one of several operations that have proved successful. Condition of the drilling fluid has had much to do with the ease or difficulty with which the pipe and tools have been recovered, and the company has learned much that can be applied elsewhere.

Yount-Lee Program

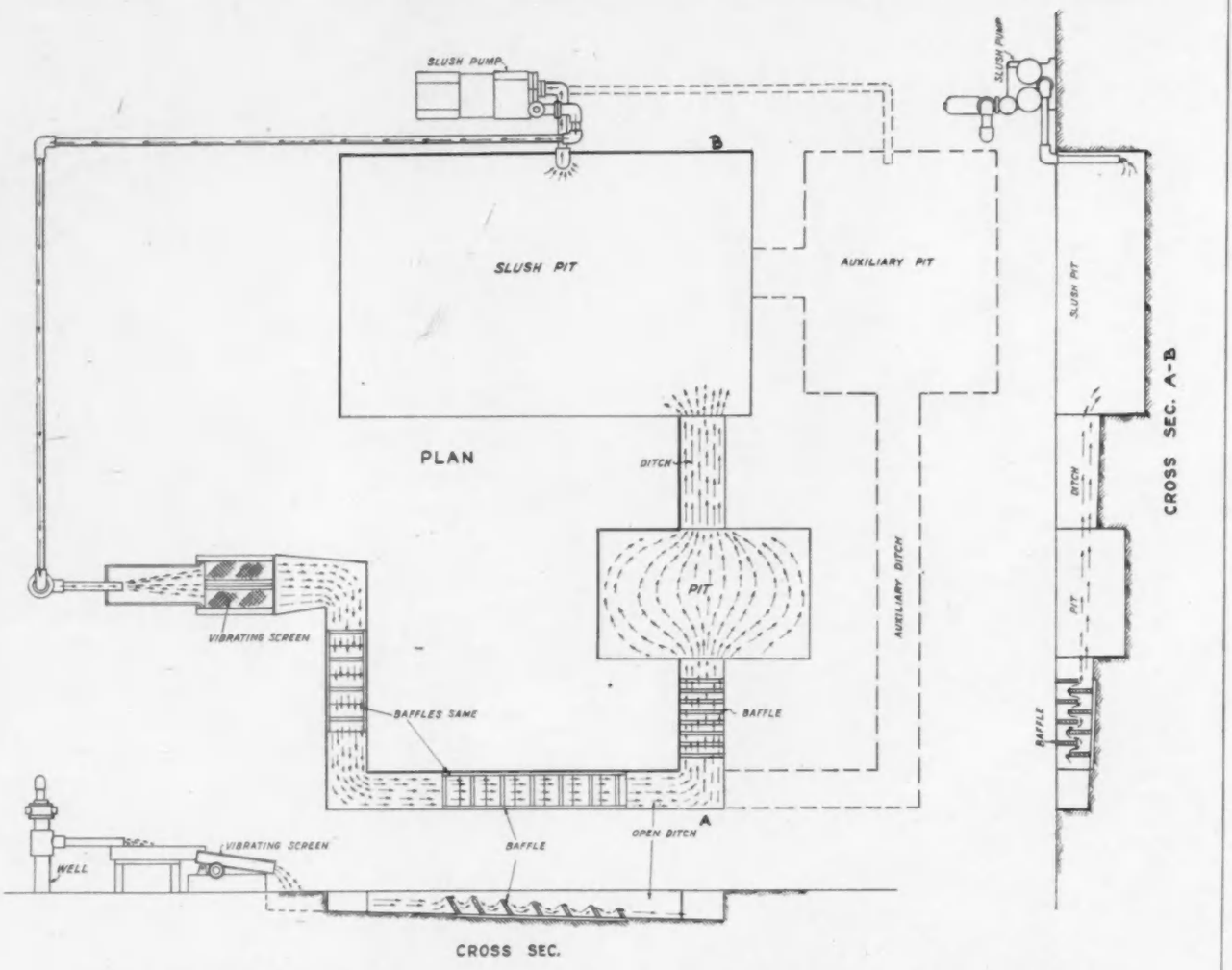
Yount-Lee Oil Company has been very successful in handling heaving shale in a number of Gulf Coast fields. This company has been a pioneer in the use of chemicals, and maintains a complete laboratory in connection with its research department. Chemistry is applied on the theory that each type of shale requires a different treatment, and that each field presents its own problems.

The company believes that the primary function of chemicals in the drilling fluid is to treat the shale so that it will remain in place during drilling operations and after the pressure has been removed. Both organic and inorganic chemicals are used in the 22 combinations or formulas used in fighting heaving shale. The formulas are numbered and applied as conditions seem to demand.

Geology plays a very important part in the selection of a chemical formula used in the drilling fluid. The reaction of the various strata to different chemicals is considered, both from laboratory tests and the known characteristics of the formations. The company has proved favorable



Reserve mud tanks at left used by Pure Oil Company in drilling Yount-Lee 12, deep test in the Sweet Lake field.



Method used by Yount-Lee Oil Company for handling mud while drilling through heaving shale.

and unfavorable shale reactions to certain chemicals by experimentation and substitution during drilling operations.

Yount-Lee Oil Company has developed a program that calls for action at 500 or 600 feet above the heaving shale. The hole is placed in condition and the drilling fluid conditioned far above the level at which the heaving shale is expected. The company discovered several years ago that it was dangerous to await entry into the shale before attempting to diagnose the case. Geological conditions are studied and cores examined above the shale strata.

The angle at which the shale lies is determined by coring. An effort is then made to counteract the angle of repose. The chemical formula is changed each 10-degree change in the pitch of the shale strata. A chemical combination that will control heaving shale lying at an angle of 35 degrees from vertical might not prove effective in handling shale lying at an angle of 50 degrees. The intensity of the reaction of the chemical or shale may increase or decrease as the angle changes.

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These Catalogs Helped

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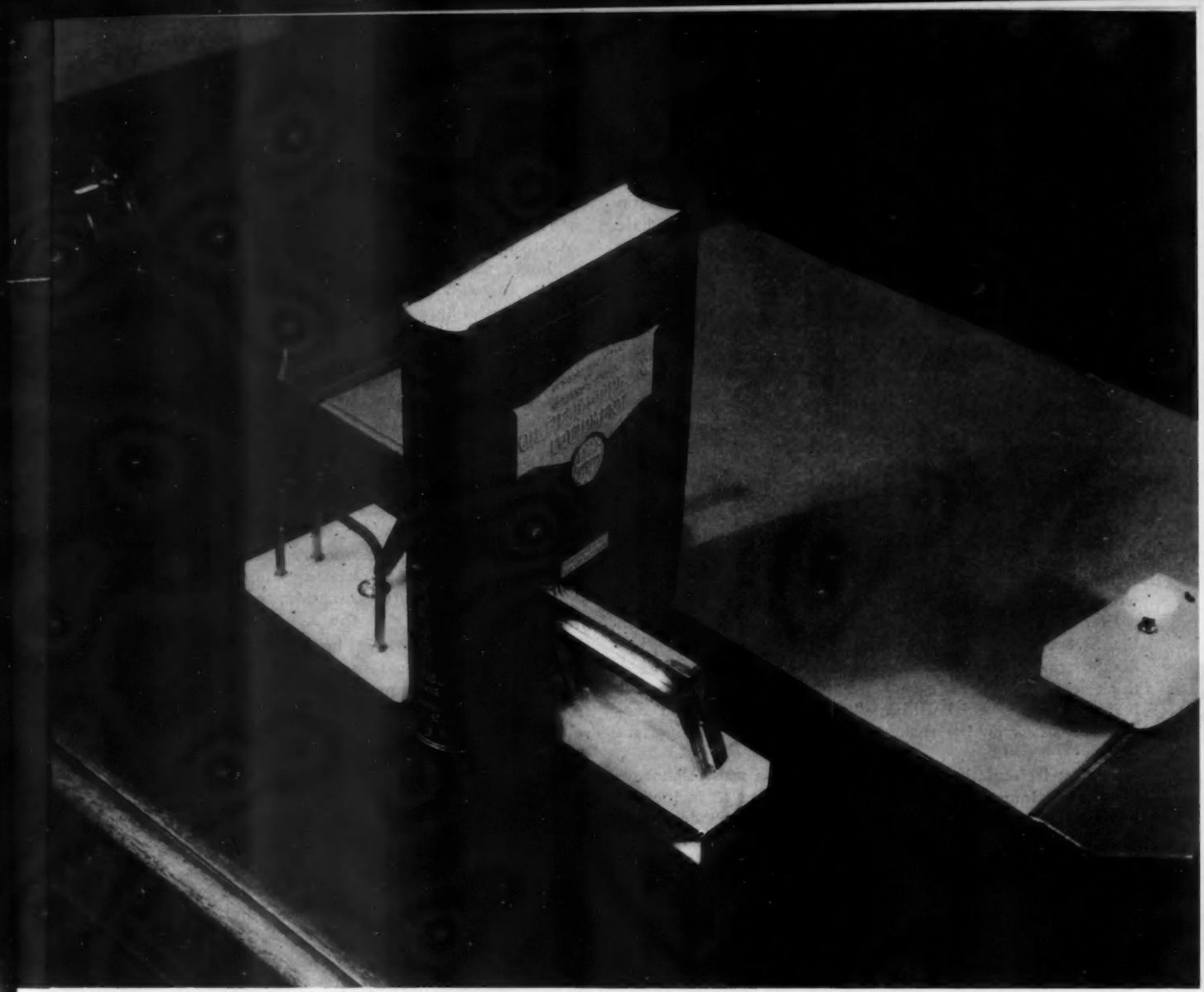

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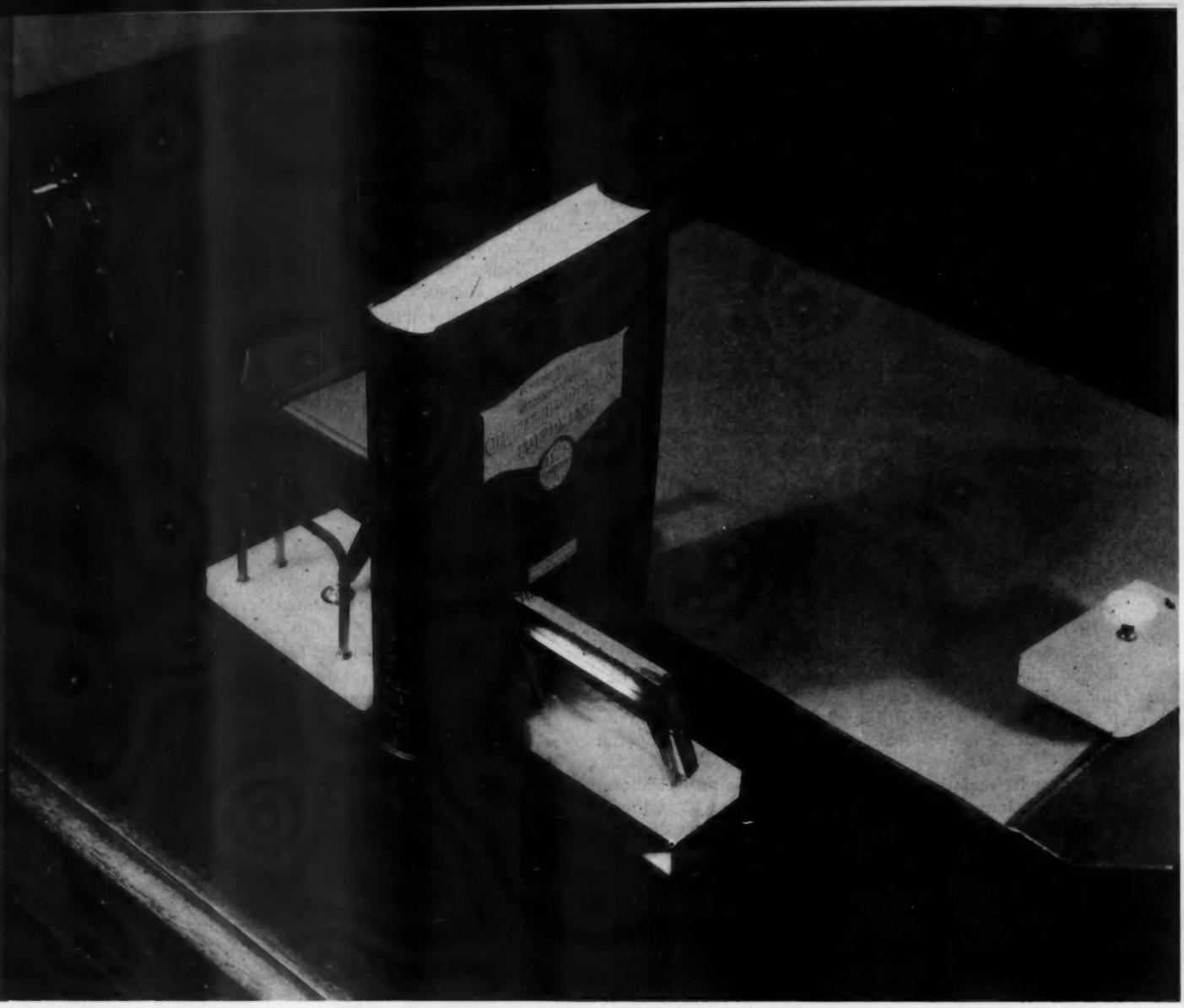

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treating requirements are especially severe, the mud passing from the larger pit to the smaller one.

Yount-Lee Oil Company recently drilled to 6341 feet in S. A. Pipkin 1, a deep test in the Big Hill field, Jefferson County, Texas. In this well, 1126 feet of heaving shale was penetrated. Most of the shale was lying at a very sharp angle, a considerable thickness lying 55 degrees from vertical. More than 20 kinds of chemicals were used, and in drilling through the heaving shale the company tried six new formulas. A string of seven-inch O. D. casing was cemented on bottom after a definite break in the shale had been found.

Pure Practices

Pure Oil Company has been using a combination mechanical and chemical program in its attack on heaving shale. During the past year this company has made considerable progress in a number of districts and has been able to penetrate heaving shale under difficult drilling conditions. The synthetic mud used at Louise and at Sweet Lake was similar to that used by Humble Oil & Refining Company at Goose Creek. The two companies worked together in blending the special mixture.

In drilling to 8196 feet in Yount-Lee 12, deep test in the Sweet Lake, Louisiana, field, Pure Oil Company has demonstrated the value of a well planned program. A thick section of heaving shale was encountered below 6500 feet. While a special drilling fluid was the principal medium of attack on the shale, mechanics played an important role.

The mud circulating system is one of the most elaborate ever used along the Gulf Coast. Yount-Lee 12 is located in Sweet Lake, a body of water six to seven feet deep, and special preparations for handling mud on the surface entailed a large additional cost. At one time a 15x8½x20 slush pump, one of the largest ever built, was used, but smaller pumps have been installed. The large pump was used in the nature of an experiment, since it was the belief in some quarters that a large volume of mud was a strict requirement in handling shale.

The present surface equipment for handling mud includes two vibrating screens, a 14x7¼x16 pick-up pump, two 500-barrel steel tanks, three 250-barrel reserve and supply tanks, a 14x7¼x14 pump, and two 14x7x18 pumps. The mud after passing through the vibrating screens, or shakers, is picked up by the 14x7¼x16 pump and sent to the first 500-barrel tank. This tank is in reality a spiral mud ditch, the mud entering the center of the tank and working its way around through a spiral lane to the second 500-barrel tank. The spiral ditch inside the first 500-barrel tank is more than 140 feet long.

The mud normally is picked up from the second 500-barrel tank by the 14x7¼x14 pump. One of the 14x7x18 pumps takes the mud from the smaller pump and sends it to the well, while the second large pump stands idle. This compounding has greatly increased the mud volume, and in addition has created a potential mud line pressure far above the pressure that could be built up with one pump in case of emergency. During short periods when very high pressures were needed, the compounded pumps delivered about 80 percent more pressure than had been possible with one pump.

The fact that all equipment incidental to drilling Yount-Lee 12 rests on piers accounts for the handicap in handling the mud. Use of a spiral ditch in a 500-barrel tank and the special pick-up pump might be eliminated if it were convenient to provide a ditch with a gradual drop to the supply tank or pit.

The company has found its provisions for a large volume of drilling fluid and high line pressure very helpful when there was a tendency for the hole to heave or the drill pipe to freeze. A large volume of mud delivered when needed may prevent trouble. Full removal of cuttings has also been helpful when excess shale was entering the hole.

A strong and even volume of mud that will not disturb the lower walls of the hole is the correct volume, while drilling through shales that tend to crumble when cut. The successful application of a large mud volume in Yount-Lee 12 indicates that a number of heaving shale failures in the past have been caused by inadequate pumping equipment. Besides removing the excess cuttings, it is often necessary to maintain a large volume and a satisfactory pressure at and near the bottom of the hole. When there is a tendency to lose circulation, it is sometimes possible to restore the returns through the application of greater pump pressure.

The synthetic drilling fluid used while drilling through heaving shale in Yount-Lee 12 consisted of a mixture of bentonitic matter, El Paso clay, quebracho, caustic soda, and weight materials. Viscosity and weight were easily controlled with this combination, which previously was used by the company in the Louise, Texas, field.

The mud records kept hourly are perhaps the most complete ever designed for a drilling well. The work is in charge of two engineers who sleep in a houseboat near the well. The drilling fluid is checked and analyzed at regular intervals.

In reaching a depth of 8196 feet in Yount-Lee 12, Pure Oil Company has made a strong effort to penetrate the heaving shale in a promising district. Production is found at a much shallower depth and the company is assured of a producer by plugging back, but the greatest value lies in the exploratory phase of the undertaking.

Continental Plans

Continental Oil Company has attacked heaving shale largely through the mechanical route, and still holds to the theory that mechanics is a more important factor than has been suspected. The company now has under consideration a drilling plan for use in the heaving shale belt of Matagorda County, Texas. It roughly parallels the program carried out with fair results last year.

In drilling to 6995 feet in Robbins 1, a deep test in the Citrus Grove area, Matagorda County, Texas, a number of new mechanical features were important factors in a greater penetration of heaving shale strata than had been accomplished previously. Enough was learned while drilling this well to support the theory that the solution to the heaving shale problem will be a combination mechanical and chemical method.

The casing program in Robbins 1 represented an original attempt to penetrate the shale with an unusual combination of sizes and lengths. The short-string casing idea was adopted principally to reduce weight, but the program also reduced casing costs to a minimum and facilitated handling the short casing strings that were used as drill pipe.

A full string of 9⅝-inch casing was cemented at 6275 feet after more than 200 feet of heaving shale had been drilled. The hole was drilled to 6660 feet, but it was evident that another string of casing would be required. The next step was to run about 800 feet of 7⅝-inch O. D. flush joint casing as the bottom section of the drill pipe, the plan being to reach bottom and drill as far as possible before having to back off and leave the bottom section of casing in the hole. A special bit was attached to the bottom of the 7⅝-inch section of casing, and the 4½-inch drill pipe was attached to the top of the casing by a special

CENTRALIZES THE CASING IN WELL

The well of today involves an investment of sufficient size to justify every safeguard that contributes to its successful completion.

This accounts for HOWCO CO-AXIAL SPIRAL.

It is an EXTRA measure of safety. An ADDED assurance of a successful cementing job.

The twofold function of HOWCO CO-AXIAL SPIRAL is to *prevent* direct contact between casing and hole at critical points and to give the cement a "twist" around the casing at those points. Used on surface casing, it provides extra protection against blowouts from shallow gas sands or charged water sands.

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HALLIBURTON OIL WELL CEMENTING COMPANY

DUNCAN, OKLAHOMA

safety joint. This made it possible to back off from the casing and leave the casing section in the hole. The bit was designed to permit milling out to the full size of the casing so that the next smaller string could be run.

The 7⅝-inch casing section froze before it was rotated to bottom. The drill pipe was backed off and the short casing string left in the hole. The bit on bottom was milled out, and a short bottom section of 5½-inch O. D. flush joint casing run, with a shale bit on bottom and drill pipe on top. The intention was to drill as far as possible with the combination string, and then back the drill pipe off at the safety joint, leaving the bottom section in the hole as casing.

The hole was drilled from 6660 feet to 6960 feet with the combination string of 5½-inch casing on bottom and the drill pipe on top. At this depth the lower casing section froze and it was necessary to back the drill pipe off and leave the casing in the hole. After milling out the bit on the bottom of the 5½-inch casing section, a full string of 3½-inch flush joint casing was run with bit on bottom. The hole was drilled to 6995 feet before the small string froze. Running a smaller string inside the 3½-inch casing was not practical.

After recovering the 5½-inch casing to 6630 feet, a side-tracked hole was drilled to 6926 feet. A bad heaving shale stratum was encountered, and after twisting off the pipe at 6624 feet the hole was abandoned.

The company succeeded in making considerable progress by running two short casing strings on the bottom of drill pipe, but the full thickness of the heaving shale body was not penetrated.

An unusual feature of the short casing strings was the use of steel ribs on the outside of the casing. These ⅜-inch ribs were made of square key steel and were welded flush to the casing, running parallel with it and extending its full length. These ribs acted as a reamer, helped to fill up the hole, and gave a uniform wall-building action to the drilling fluid. The ribs also provided shallow channels for the returning mud. Three or four ribs were used, depending on the size of the casing.

Continental Oil Company has extensive holdings in Matagorda County, and is considering further development in the heaving shale area. The present plan calls for use of a series of short casing strings, such as were used in drilling Robbins 1 in the Citrus Grove district.

Progress has been made in several other heaving shale districts along the Gulf Coast. Pure Oil Company used a synthetic drilling fluid successfully in the Louise field, Wharton County, while Cockburn Oil Company is having outstanding success with a special drilling fluid in the Sheppards Mott area, Matagorda County, Texas. Research and progress have not been confined to two or three areas, and some of the less conspicuous efforts may prove more important than the elaborate methods used in a number of Gulf Coast fields.

Well No. 13 Is Lucky

Pumps 16 Years Without Pulling

IN 1904, C. B. Shaffer, Tulsa, Oklahoma, drilled in his Lee 13, five miles southeast of Sedan, Kansas. It was just an average well in the Peru sand, found in that locality at about 1085 feet. In September, 1906, he employed as pumper for this lease, E. E. Shannon of Sedan, who had learned the oil business back in the cradle of the industry, Franklin, Pa.

Sometime in March, 1918, Mr. Shannon pulled the rods on Lee 13, and equipped it with a new set of cups and ball and seat. Last December, 1934, he pulled the rods for the first time since then, establishing a record of 16 years and nine months that this well had pumped without pulling either tubing or rods.

The remarkable part of the story is that at the time the cups were pulled in 1918, the well was producing but about one barrel per day. Along about this time, several wells on the Lee lease were plugged, but No. 13 was left alone, and shortly after began increasing its production. A few years later it had increased to about 14 barrels daily, from which point it diminished slowly to its present production of eight to nine barrels per day. It is estimated that the set of cups pumped more than 40,000 barrels during the 16-year period.

The well is being pumped with a 24-inch stroke. Assuming that it pumps one quart of oil per stroke, the valve would have to travel 13,400,000 feet in order to pump 40,000 barrels.

The lease now is owned by Deep Rock Oil Corporation, and E. E. Shannon still is the pumper. Although he is 73 years old he is on the job every day and going strong.

Submitted by C. I. LAYTON,
Layton Oil Company,
Garnett, Kansas.

Lee 13 and E. E. Shannon, pumper.

Production Allocation

A review of past, present and future proration methods

I. F. BINGHAM
Professor, School of Petroleum Engineering, University of Oklahoma

ARTICLE II

Modified Bottom-Hole Pressure Allocation

IN the Yates Pool, establishing potentials by open flow has been discontinued for several years. When it is desired to establish a new potential for a well the shut-in bottom-hole pressure is taken. The new potential is taken to be equal to new bottom-hole pressure ÷ 700 pounds × the last open flow potential. (The average bottom-hole shut-in pressure was 700 pounds at the time the last open flow potential was taken.)

In arriving at the current potential for a well by this method, the assumption is made that bottom-hole pressure decline parallels oil production decline. Here use is not made of the productivity index explained later.

We are familiar with the fact that gas-oil ratios generally increase during the later flowing life of the well. For this reason it is questionable whether bottom-hole pressure declines will continue to bear the same relationship to the oil production decline. If this be true, it is possible that we do not have an accurate measure of the ability of the wells to produce oil. However, in a field where production is controlled, as in the Yates Pool, an error of this type would not likely penalize part of the wells because this pressure decline is fairly uniform. It is doubtful if this method would be applicable in the Oklahoma City pool, where we have inter-communication between the producing horizons and where the gas cap shifts. Under these latter conditions we have many instances of sudden pressure decline or pressure increase. We also have a number of cases where an oil well has suddenly changed to a gas well.

Irrespective of the defects in the method it has served to eliminate the injury of open flow potentials where an operator's agreement to abide by it has been possible.

An Allocation Formula[4]

The following formula is based upon the belief that equity in a prorated pool is obtained when each tract is allowed to produce the oil in proportion to the recoverable oil pertaining to that tract.

The proposed formula is:

$$V = M + c\,(A\sqrt{HPB})$$

Factors defined:

V=The daily allowable. Expressed in barrels per day. This allowable is per unit agreed upon, regardless of the number of wells.

M=Minimum allowance. Expressed in barrels per day. This is to insure the operator of sufficient allowable to pay for the cost of lifting the oil and also to retire part of his investment. This minimum is constant for the whole field and should only change with the changes in values of the oil.

A=Area, expressed in the number of acres per unit, that applies to a field developed with a unit spacing plan. In fields with non-uniform spacing this area should be the total area of the field divided by the number of wells. To prevent operators with large tracts getting credit for too large an area without drilling, it should be stipulated that the acreage credit given to any well should not exceed some fixed ratio of the average number of acres per well in the field.

H=The net thickness of the producing formation. H is expressed in feet. This should be corrected for that portion of the formation filled with water, gas or non-porous layers. Also, corrections should be made for variations in porosity. Example: A foot of sand having half the porosity of the average for the field, should get credit for a net thickness of half a foot.

P=Ability to produce or productivity. Expressed in barrels per day. In certain fields the open flow potentials may be used for P, but the results would not be as accurate as if obtained by the following method.

If the allowables were to be based on the total reserves under the tract, the formula should consider only H and A; but since it is based on the recoverable oil, it should take into consideration the ability of the well to recover the oil. Experimental studies have arrived at the conclusion that the percent re-

IN Article I of this series, of which this is the concluding installment, the necessary principles required for satisfactory allocation of production were discussed. In addition, proration under unit operation, proration on the basis of flowing time, open flow as a basis of proration, volumetric withdrawals, proration by allocation of gas energy, and bottom-hole pressure relationship as the basis of proration were discussed. Article I appeared in The OIL WEEKLY of March 25, 1935.

This installment continues the discussion of various proration methods.

[4]H. D. Wilde, Jr.—The Oil Weekly, March 12, 1934, page 20.

coverable varies approximately as the square root of the product of the bottom-hole pressure, the permeability and the fluidity of the oil. That is, Percent Recovery $\sqrt{BKF}$. Where B=Bottom-Hole Pressure, K=Permeability, and F=Fluidity of the oil. By experiments also it is known that the potential index or productivity factor (1) (later explained) varies directly as the permeability, K, the fluidity of the oil, F, and the thickness of the formation, H. Since it is almost impossible to measure K and F, I is introduced, since this can easily be measured. Therefore I=k(KFH). I is determined by dividing the flow in barrels per day by the difference between shut-in bottom-hole pressure and the bottom-hole pressure at that rate of flow. That is:

$$I=\frac{\text{Flow (bbls./day)}}{\text{B.H.P. (shut-in)—B.H.P. (at flow)}}$$

For the purpose of this paper the product of I and B shall be called absolute potential P.

Therefore:

$P=B\times I$ but $I=k(KFH)$ or $P=k(BKFH)$.....2

Now

Percent recovery $k\sqrt{BKF}$ (from 1).....3

Dividing equation 2 by H and extracting the square root, we have

$\sqrt{\frac{P}{H}}=k\sqrt{BKF}$ Percent recovery.

If we multiply $A\times H$, which is the total oil reserve, by

$\sqrt{\frac{P}{H}}$,

which is the percent recovery we would get $A\times\sqrt{HP}$, which would be proportional to the total recoverable under the tract.

B=Bottom-hole pressure, in pounds per square inch. This factor has already been included in the formula as it is, but it is introduced again as a compensating factor in the event that one of the factors in the

EXAMPLE

Assumptions—A field composed of 3 wells, A, B, C, whose properties are:

Well No. A A=20 acres
H=50 feet
I= 5 bbls./day/lbs./sq." $I=\frac{200\text{ bbl./day}}{1000-960}=5$ bbl./day/lbs./sq."
B=1000 lbs./sq." $\therefore P=B\times I=5000$ bbl./day.

Well No. B A=15 acres
H=60 feet
I= 8 bbls./day/lbs./sq." $I=\frac{800\text{ bbl./day}}{1200-1100}=8$ bbl./day/lbs./sq."
B=1200 lbs./sq." $\therefore P=B\times I=9600$ bbl./day

Well No. C A=10 acres
H= 40 feet
I= 4 bbls./day/lbs./sq." $I=\frac{280\text{ bbl./day}}{800-730}=4$ bbl./day/lbs./sq."
B=800 lbs./sq." $\therefore P=B\times I=3200$ bbl./day.

Field Allowable=1000 bbls./day
Minimum allowable=25 bbls./day
Calculation for (c)
Total M=25×3=75 bbl./day.
Amount left to be distributed=1000—75=925 bbls./day

Well No. A	$A\sqrt{PHB}=20\times\sqrt{5000\times50\times1000}=10{,}000{,}000$	
Well No. B	$A\sqrt{PHB}=15\times\sqrt{9600\times60\times1200}=13{,}500{,}000$	
Well No. C	$A\sqrt{PHB}=10\times\sqrt{3200\times 4\times 800}=$	2,800,000
Total	$A\sqrt{PHB}$	26,300,000

$\therefore C=\frac{925}{26{,}300{,}000}=.000035$

Allowable for wells

Well No. A	$V=25+.000035\times10{,}000{,}000=375$ bbl./day	
Well No. B	$V=25+.000035\times13{,}500{,}000=507.5$ bbls./day	
Well No. C	$V=25+.000035\times 2{,}800{,}000=$	117.5 bbl./day
		1000 bbl./day

Development of Formula:

Experiment—% Recovery $=k\sqrt{BKF}$ B=B.H.P. K=Permeability F=Fluidity of Oil

$P=B\times I$ & $I=\frac{\text{Flow (bbl./day)}}{\text{B.H.P. (shut-in)} - \text{B.H.P. (at flow)}}=$ bbls./day/lbs./sq."

$\therefore P=k(KFHB)$

Experiment—$I=k(KFH)$

dividing by H $\frac{P}{H}=k(KFB)$

square root $\sqrt{\frac{P}{H}}=k\sqrt{KFB}=$ % recovery

$A\times H$=Total oil reserve

$\therefore A\times H\times\sqrt{\frac{P}{H}}=$ Total oil recoverable $=A\sqrt{HP}$

For safety $V=M+c\sqrt{HPB}$

When production slips off, there may be every possibility of recapturing the golden flow—with Dowell *inhibited* acidizing or other proven chemical treatments.

Dowell has won the respect and admiration of the oil industry for its sound methods—and its exceptional record of results. To date it has successfully treated thousands of wells with Dowell X—the *inhibited* acid.

Our emphasis of *"inhibited"* is important to every oil producer, because it stresses the vital value of acid specifically compounded to do its job without damage to tubing or casing.

Dowell employs only trained treating engineers—prepared with knowledge and experience to give sound, intelligent service.

Moreover, when Dowell does the job, it makes a thorough study of every available factor—geological and physical. It takes no chances. Dowell prefers to proceed only when conditions favor profitable results. It has no desire to waste producer's money or jeopardize its own good reputation. It wants *results*—for its customer's satisfaction and its own records.

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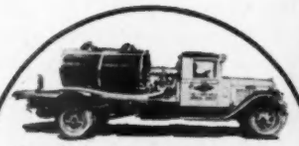

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OIL AND GAS WELL CHEMICAL SERVICE

formula is in error. By this we mean: In case one well has been given a greater I, therefore more allowable, it will produce naturally more at present, but with the factor B in the formula, in the next allocation period, B will be smaller since it was over produced, and therefore, with B smaller its allowance in this period would be smaller.

c=Conversion factor. Since V and M are in barrels per day, and the other factors are a combination of feet, acres, pounds per square inch and barrels per day; a converting factor, c, has to be determined as is shown by the numerical example. c is the same for the whole field and as it may be seen it varies as the total allowable varies.

Summary of Past Proration Methods

In summarizing the attempts that have been made to secure a satisfactory basis for proration we find that nearly all of them possess merits but that none of them possess all of the fundamental requirements namely:

1. Equity to all interested in the pool.
2. True conservation of natural resources.
3. Principles capable of enforcement under our present laws.
4. Practicability from the operating standpoint.

It may appear up to this point that this paper was written primarily for the purpose of criticizing the attempts of those in the industry to produce a workable basis for proration. On the contrary some very commendable work has been done along this line. When we consider the great variation of conditions that exist as to statutes, ownership, structural conditions, sand conditions, etc., from field to field, we realize how difficult the problem becomes.

The conservation of oil, which has been accomplished through these attempts, can be made more graphic by comparing our worst proration method with the old open flow method of producing wells. We ordinarily assume that our least satisfactory method of prorating consists of production allocation upon the basis of open flow potentials. Here the well is produced at full capacity for a period of from two hours to 24 hours once in each 30 days. For the remainder of the month the well may be produced under the most efficient method. Under the old method the well was flowed wide open at all times. Were it not for the fact that much hot oil has been produced we would be reasonably safe in asserting that proration even on this basis has increased the ultimate recovery for all flowing fields prorated. In this sense we have had conservation of oil.

That stabilization to a certain extent has been accomplished is quite evident. It is true that there has been a breakdown from time to time but for the greater period of the depression the price structure has been maintained far above what could have been expected had there been no attempt to work out a basis for proration.

As we study the proration orders from field to field we can find many instances of inequity, but, usually, this inequity is more apparent than real. To explain this, assume that a lessee is discriminated against because of an imperfection in the method of arriving at the proper well potential. But suppose that due to these restricted withdrawals from the pool in which the lease is located, the ultimate recovery of the pool is increased by 50 percent. In this case even though the established potential for this lessee's well involves an error of as much as 10 percent, the lessee still has gained production over and above what he might have expected under competitive open flow methods of producing the field.

Now, as to the practicability of the plans tried thus far, they have presented many perplexing problems. Many mistakes have been made and much work has been added in producing oil. Secretary Harold L. Ickes states that ten cents per barrel has been added to the cost of producing oil under the code. Part of this is chargeable to proration. On the other hand the knowledge gained to the industry as a result of taking data for the purpose of arriving at potentials, possesses an intangible value which partially offsets the added cost of production. And it is undoubtedly true that a more stable price structure and an increased ultimate recovery resulting from more orderly withdrawals from oil pools show a profit traceable directly to proration.

Projecting the Problem Into the Future

One point should be stressed. If engineering knowledge at the present time will enable us to predict with greater accuracy the probable recoverable oil and gas beneath a certain lease than would have been possible 15 years ago, and if our more comprehensive knowledge of production engineering enables us to produce with greater efficiency and consequently, greater ultimate recovery from a pool, is it not logical to assume that we can with greater accuracy distribute equity to every lease holder within the pool than was possible under the conception held that every man may produce in any manner possible all the oil and gas which he can capture from beneath his surface rights? If we can establish this point we have a basis for declaring upon and condemning wasteful practices within the pool provided we use this knowledge to appraise the value of any well which is condemned. If this premise is sound, it seems that it is possible to adopt some such proration method as outlined above under the "Bottom-Hole Pressure Method" and carry the matter a step farther. Under the method as outlined, wells which waste the pool's energy are not penalized. I believe it is possible for the technical group within a field to show increased profits to all concerned in the field by adopting a bottom-hole pressure decline method of proration and then adding two new features.

The first of these would be to adopt from time to time a bottom-hole flow pressure decline, which gives the most efficient results regardless of the quantity allocated to the field. The second change would require the closing in of a well which produces with an unnecessarily high oil-gas ratio, compensating the owner of such well for oil equivalent to that which it has been demonstrated that the well could produce under the current allowable pressure decline adopted for the pool for the current potential period. It would further be necessary to compensate the owner of such wells for the gas energy in place according to the demonstrated ability of this well to produce gas at the permissible bottom-hole pressure reduction.

The next question which arises is what to do with the edge well producing water, oil and gas. If this edge well lies in a pool where hydrostatic control is a factor in producing oil, then the well should be closed in by all means. If, on the other hand, this edge well lies within a pool where edge-water drive is not a vital factor in the producing history of the field, the question of closing in the well should devolve solely upon the gas-oil ratio. The writer can see no reason why appraised valuation of the oil and gas energy in this edge well should not be calculated exactly as in the example given.

Assume well A produces with an excessive gas-oil ratio and it is decided to close it in and compensate the owner of well A upon the basis of A's ability to produce oil. Totaling the capacities of the seven wells, column 4, and dividing the capacity of this well by the total we have $\frac{34}{848} \times 100 = 4.01$ percent. Well A should be allowed 4.01

percent of the field allowable. In a similar manner we could arrive at the amount of gas, produced through other wells, to which well A is entitled. These calculations would also fix the share of production costs which well A is entitled to bear.

Unquestionably this proposal will be attacked on the basis that there are too many unknown or undeterminable values. This is partially true, but it must be remembered that at least it is based to a large extent upon known factors which have positive values and that any middle ground solution of the problem makes at best as many assumptions, and that this later development or proposed method always possesses the safety factor of an added ultimate recovery which would compensate if not outweigh any closer guess which has been the basis for orders which have existed in the past. It is further true that compensation in this case is based upon the same set of facts and assumptions as has been used to measure the ability of the well to produce, or to cause a well to be closed in. This would have the further value that since the unfortunate owner of the high gas-oil ratio well has his well condemned he is being compensated so that his investment or venture does not constitute a total loss. He is compensated for the oil, gas, and energy which he releases to other wells. Regardless of the state in which it occurs, there is probably no court which will sustain an action closing in a well because of inefficient flow if the owner receives no compensation. On the other hand, if shown by available evidence that the well was unnecessarily dissipating and wasting the common source of energy within the pool and if further shown that the owner was being compensated for the minerals beneath the surface according to a reasonably scientific calculation, it is doubtful if any court would fail to sustain an action closing in said well.

It is realized that the above proposal is bold and is a radical departure and it is questionable if we are ready just at this time, to adopt any such scheme of proration. But some such plan with necessary modifications must be accepted before the several agencies sponsoring and directing proration can reach an agreement. State agencies, federal agencies and the courts must accept a common basis for proration before proration can become effective to the extent of securing stabilization for the industry.

A Cause for Proration Violation

In conclusion, it seems fitting to call attention to a situation which has not received sufficient consideration up to the present time. Violators of proration orders fall naturally into two classes. One class violates proration orders for the purpose of taking that which does not belong to them. They outwardly appear antagonistic when speaking of proration. They know, however, that proration, observed by the majority, is the only thing that permits them to show a profit from illegally produced oil.

Another class of violators, or those who are at least antagonistic in their attitude toward proration, are in a way victims of changing economic conditions.

Upon the introduction of proration within the industry we changed oil production from a competitive, wasteful process to a process which involves slower withdrawals over a longer period of time, with the hope of stabilizing the price structure and increasing the ultimate recovery from pools. We changed completely the economic angle; more specifically, we changed the financing phase of developing oil fields and producing oil. Under the old competitive method it was possible to finance the development of a lease on short time loans, produce the wells at full capacity and soon retire the loan. Under proration we have changed the oil producing business into a long time investment proposition.

A noted economist some years ago laid down the principle that any business is insolvent to the extent that its officers find it impossible to immediately liquidate assets, for the purpose of discharging pressing obligations. If this principle is valid proration would throw many operators into the insolvent class because their assets consist of oil in place that cannot be removed and sold at will.

An easy but unsatisfactory answer to the situation would be to say, "Let those who cannot enter the business as a long time investment proposition stay out of it." But this is not sound on two counts. First, because when proration came into being many short financed operators were already engaged in the oil business to the extent that they could not withdraw without losing their entire investment. Second, if only those who have sufficient capital and reserves to stay in the business under the most trying conditions are permitted to remain in the oil industry, we will shortly find the American oil business entirely in the hands of a monopoly and the American people will suffer thereby.

A small operator in the Oklahoma City field owned a well in which he had more than $150,000 invested. That well was capable of producing 42,000 barrels of oil and 200,000,000 cubic feet of gas daily. The well had to be closed for 60 days and then opened for less than 250 barrels daily.

An operator in East Texas had $18,000 invested in a lease. He borrowed $15,000 to drill a well by selling future production from the well at the best figure he could obtain at the time, 15 cents per barrel, and in addition paid 10 percent interest on the loan. His investment now amounted to 230,000 barrels of oil, which is more than the expected ultimate recovery from the well. Many such cases may be found in the industry since 1931.

Running oil produced in violation of existing proration orders naturally presents itself to the above operators as a way out of the dilemma. It is not intended to justify violation of proration orders, but rather to point out that for at least a portion of the violators there is a basic economic factor which operates as a contributing cause. Is it not true that everyone believes proration for the purpose of stabilization is fundamentally sound but that some cannot afford to accept it?

Those who cannot afford to accept and abide by proration fall into these classes:

1. Those who willfully violate for profit.
2. Those who are actually discriminated against by existing proration orders.
3. Those who are inadequately financed and hence are unable to defer production in keeping with the best interests of the industry.

The first class deserves to be dealt with harshly. The second class could in nearly all instances be converted if the same set of factors were used in adjusting their grievance as were used in producing that grievance. More specifically, resources which are condemned must be paid for by those who will profit by virtue of these resources having been condemned. And the same set of factors which justified the condemning of said resources should be sufficiently dependable to arrive at a fairly accurate appraisal of these resources. The third class is made up of those who have knowingly gambled with the odds too heavily against them and of those who are victims of the aforementioned economic change within the industry as a result of proration. Perhaps part of this class deserves to be eliminated—victims of their folly. Perhaps the more stable element of this class deserves the assistance of an agency through which they may refinance their operations so as to remain in the oil business in harmony with its changed aspect.

Unusual Rig Hook-Up *Being Used by* South Texas Contractor

EARL S. POST
Staff Representative

SAFETY and efficiency have been combined in a drilling rig recently constructed for Rowan & Hope, Inc., drilling contractor of San Antonio, Texas. One of the outstanding features is the quick manner in which the equipment can be rigged up. This rig is a reconstruction job, being made from a more unwieldy outfit by this concern.

The major feature of this particular outfit is the drawworks and line shaft assembly. Three "A" shaped frames are welded onto skids. On one side, the drawworks was rigged up and on the other side was mounted the line shaft. They were connected together with chains in the usual manner. The advantage of this assembly is that it eliminates the headboard and jack post rigging as well as other contraptions necessary to operate the rig with this form of set-up.

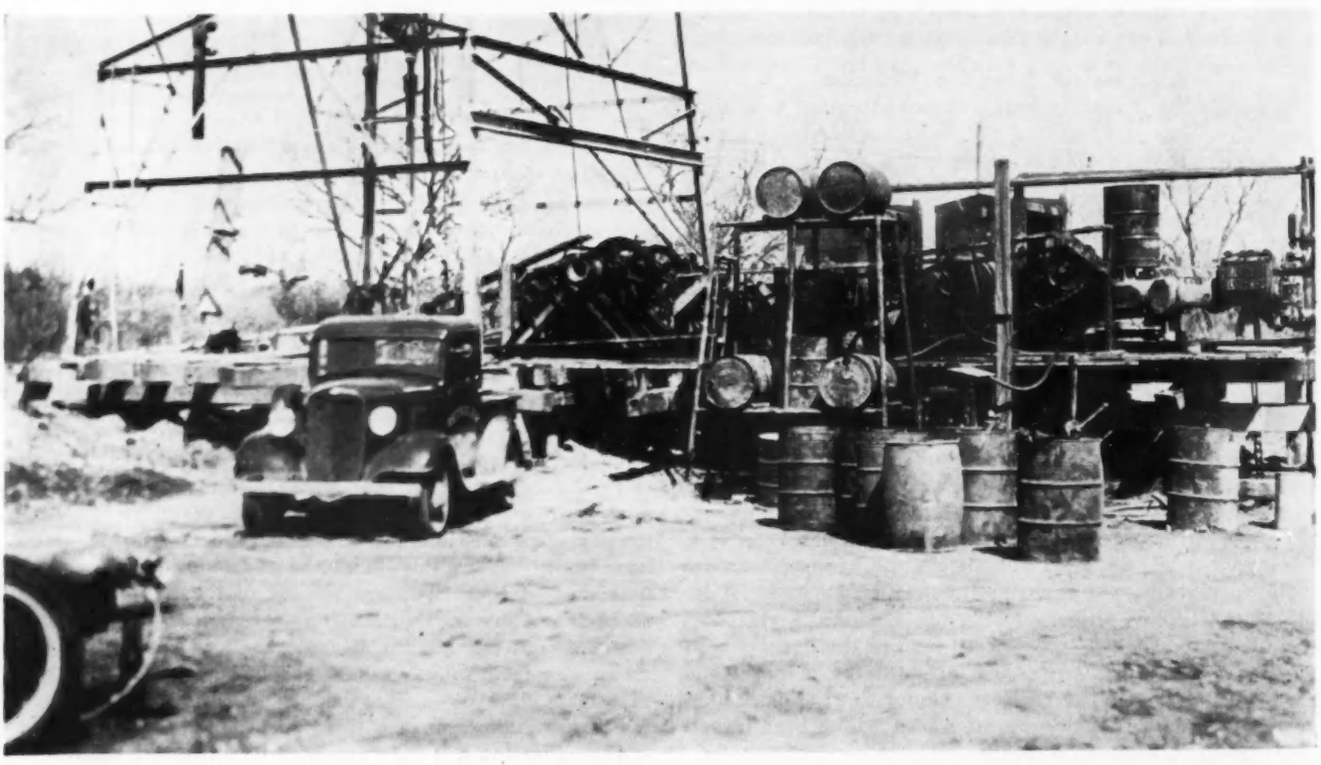
From a safety angle, the drawworks set-up has eliminated a number of open chains, so dangerous to workmen. Pieces of casing were cut in half and bent over the gears and chain paths where possible, forming excellent guards. Also the rig controls have been placed in one position for use of the driller, making rig operation from various parts of the floor unnecessary.

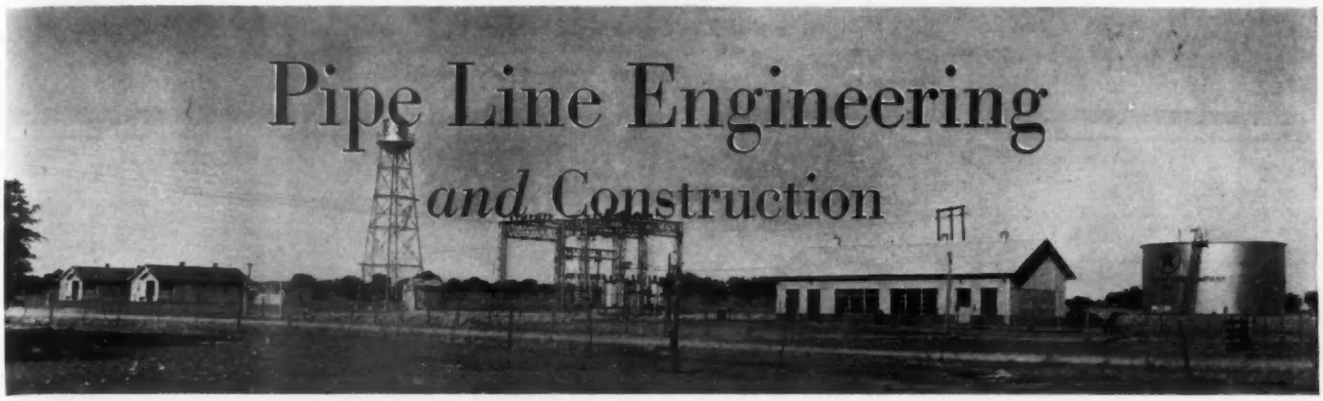
In rigging up this outfit, the regular type derrick is built. Behind the derrick, and at the level of the floor, is constructed a platform the same width as the derrick floor and about twice the length. The trucks back up to this platform and each unit of the outfit is skidded off. The drawworks assembly is skidded into place, behind which is set a 125-horsepower gasoline engine. Behind this engine is a second engine of similar size. Behind this is the pump. Chains are then hooked-up in such a manner as to allow the two engines to provide power when coming out of the hole. The tool house is elevated and placed next to the derrick floor, several feet from the drillers post, giving him access to small tools.

When in operation it is possible to inspect any part of the drilling equipment and get tools without leaving the floor because of the set-up in the rear of the derrick. A walk around all of the power and pump equipment is provided.

The convenience in the set-up, as well as revised drawworks rigging, materially reduced the time in rigging up. At the same time, the safety of the outfit is materially increased.

General view of Rowan & Hope, Inc., drilling rig.





Soil Stress *Is a Pipe Line Corrosion Factor* In California . . .

JOHN C. ALBRIGHT

THE majority of the pipe line companies transporting oil or gas in Southern California have standardized on one or the other of the two methods of determining the corrosivity of the soils traversed by their transmission lines, and have found that some soils require a pipe coating of a particular nature and application, while others may permit pipe to be laid with a lighter protection. Some pipe has been laid in favorable soils without any type of protection, particularly the sandy and decomposed granite soils whose soil index indicate that the life of bare pipe should continue for many years.

In addition to the corrosivity of the soils traversed, soil stress has exerted considerable influence, causing protective coatings to crack and be pulled from the surface of the pipe. The coating is rendered inoperative to a degree due to the infiltration of water from the soil after the dry season has passed. When corrosion is subsequently arrested from further progression by cathodic protection, these bare spots and breaks in the protective coating require more current for a given amount of pipe line than if the coatings were not attacked by soil stresses.

So many different types of soils are encountered near a long pipe line that it is extremely difficult to predict which type of coating will provide the best and most lasting protection. Soil moisture, being apparently the only variable in the corrosivity of soils, also determines whether or not pipe line coating will be effected adversely by soil stress. A number of experiments with pipe lines in service and test nipples placed in soils known to exert considerable stress, have been carried out to determine the effect soil stresses have upon pipe line coatings.

Los Angeles Gas & Electric Company has made a series of tests, using soils which were known to possess considerable shrinking properties. When making laboratory tests of this character, a number of ¾-inch x 10-inch nipples were coated with an unfilled asphalt having a ball and ring melting point of 165 degrees Fahrenheit. The nipples were prepared so that the coating was applied with a smooth surface offering no added advantage to the soil for adherence. They were placed in boxes having holes bored through the sides to promote rapid and controlled drying of the soil. The boxes containing the nipples were filled with the wet soil, and at suitable intervals, calculated and tested to give the desired degree of drying, the nipples were removed, washed and examined. Typical results are shown in Table 1.

Summing up the result of experience with protected and unprotected pipe lines, and the result of experiments with pipe line coatings under various and adverse conditions, Los Angeles Gas & Electric Company, who have, perhaps, the greatest number of miles of buried pipe lines in Southern California, has adopted specifications for pipe line coating to suit the soils and conditions encountered.

When the priming coat is applied, it is sprayed on the line immediately after the surface has been sand-blasted to remove mill scale and other foreign material, and is always

TABLE 1
Results of Soil Shrinkage Tests

Soil	Nipple No.	% of Water Dry Basis	Appearance of Coating
A	..	46.8	Smooth, start of test.
A	1	31.3	Unchanged.
A	2	21.2	Slight cracking.
A	3	16.9	Moderate cracking.
A	4	11.2	Severe cracking.
A	5	6.4	Very severe cracking, end.
B	..	41.4	Smooth, start of test.
B	6	19.8	Very slight cracking.
B	7	16.1	Slight cracking.
B	8	11.2	Moderate cracking.
B	9	5.4	Severe cracking, end.

TABLE 2
Protective Coating Specifications

Melting point	Ball and ring method	160/170°F.
Penetration	@ 77° F.	18 to 25.
Flash	Cleveland open cup	440° F. Minimum.
Solubility	Carbon Tetrachloride	99½% Minimum.
Volatility	at 325° F. for 5 hours	0.5% Minimum.
Ductility	at 77° F.	1½ cm. Minimum.
Tensil Strength	not less than 3.0 Kg/sq. cm. @	77° F.
Sulfur	by weight	1½% Maximum.

applied to a dry surface. Joints and connections, whether welded or screwed are thoroughly cleaned with scrapers and wire brushes and the primer coat applied with a brush so that all exposed and bare spots are thoroughly covered.

The protective coating is an air blown residual material, prepared from asphaltic base crude petroleum. It is required to meet the specifications shown in Table 2.

Four different types of wrapper are used by this company; rag felt, asbestos felt, fabric and two weights of paper.

The rag felt wrapper is purchased on the following specifications:

Chemical Analysis

	(by Weight)
Asphalt	60% to 65%
Binder (cellulose, wool, etc.)	20% to 25%
Infusible material	10% to 15%
Moisture, not more than	3%
Sodium Chloride, not more than	Trace

Physical Properties

Weight per 100 sq. ft., not less than	40 lbs.
Thickness, 0.080 inch, plus or minus	0.005 Inch
Strength of 1-inch strip at 77°F. not less than	50 lbs.

The width runs from two inches when it is to be applied to pipe less than 1½ inches, to 16 inches when applied to pipe 16 inches and more in diameter. The rolls are purchased made up of approximately 360 linear feet, each roll to be cut to the required width.

Chemical Analysis

The asbestos felt wrapper has the following specifications:

	(by Weight)
Impregnating matter, asphalt or coal tar as specified	25% to 30%
Binder (hair, and not more than 4% starch)	14% to 18%
Asbestos	55% to 60%
Moisture, not more than	3%
Sodium Chloride, not more than	Trace

Physical Properties

Weight, per 100 sq. ft., not less than	14 lbs.
Thickness, 0.025 inch, plus or minus	0.002 Inch

The rolls are made up containing the same amount and cut to the same width as that specified for rag felt wrapper.

The fabric wrapper is made of cotton with a mesh of approximately 20 warp and 20 fill. When it is impregnated, the excess material is removed so that the mesh is left open and the wrapper dried to prevent sticking when rolled. The selvage edges are removed, and the material cut to widths of from two inches for small pipe, up and including six-inch width for pipe larger than six inches in diameter, by following the parallel thread of the warp. When subjected to a tensile strength test, it is required to be not less than 50 pounds. The rolls contain approximately 50 linear feet for convenience in handling.

Kraft paper is used with two weights, both of which are made from material having a color which will reflect light and heat, such as white, gray or yellow. The physical properties are as follows:

Light Kraft Paper

Weight per 100 square feet, not less than	3.5 lbs.
Thickness, 0.007 inch, plus or minus	0.001 in.
Strength (Mullen test at 77°F.) not less than	40 lbs.
Length of roll, approximately	650 ft.
Width of roll	2½ in.

Heavy Kraft Paper

Weight per 100 square feet, not less than	8½ lbs.
Thickness, 0.030 inch, plus or minus	0.003 in.
Strength (Mullen test at 77°F.) not less than	140 lbs.

The rolls are to be made up having approximately 650 linear feet and cut to widths from 3½ inches for two-inch pipe and less, to 17 inches for pipe 16 inches in diameter and larger.

The thinner used by them in preparing the primer coat, is a petroleum product having the following specifications:

IBP., not less than	250°F.
10%	265°F. Min. and 275°F. Max.
50%	281°F. Max.
90%	288°F. Max.
EP.	359°F. Max.
Recovery	99%

A large amount of pipe used by this company is prepared in their pipe yard before it is strung on the line, and is sand-blasted until it has a bright clean surface. After the primer coat has thoroughly dried, following is the procedure: one coating with a temperature of between 375 degrees Fahrenheit and 425 degrees Fahrenheit pipe yard practice, and when applied in the field to pipe already laid, the temperature ranges from a minimum of 325 degrees Fahrenheit to a maximum of 375 degrees Fahrenheit. This coating of the asphalt applied is held to approximately 0.06 inch in thickness, after which a protective wrapper is spiral wrapped, for the moderate coating. Heavy kraft paper is used when large diameter pipe is being prepared, and the light paper for pipe less than two inches in diameter.

For the heavy coating when pipe is to be laid in soils that are shown to be extremely corrosive, the asphalt coat is applied in the same manner, after which a rag or asbestos felt wrapper is applied, which also is spirally wrapped. A second coat of asphalt is applied over the felt wrapper having the same approximate thickness as the first. A finished coating is applied consisting of heavy kraft paper applied dry.

After the pipe is wrapped, the protective coating is trimmed at right angles to the axis of the pipe and beveled to a feather edge, running from six to 16 inches from the ends of the pipe depending upon the size. If the bare metal is exposed when trimming, it is reprimed.

Other companies have laid out a protective coating program, some of whom apply a heavy protection to the entire line, regardless of the corrosivity index of the soil through which the line is projected. Others adhere fairly well to the data accumulated when testing the soil, placing heavy, extra heavy, and in some instances, no protection at all to their pipe lines.

FOREIGN DEVELOPMENTS AND TECHNOLOGY

Mexico *Oil Industry Situation Shows* Improvement

Production, Refinery Throughput, Domestic Consumption and Exports Register Substantial Gains

TRUE to predictions made by Mexico's Department of Petroleum of the Secretariat of National Economy in July of 1934, final production figures for 1934 mailed from the federal district the latter part of March show the nation produced more oil than it has in any of the three preceding years. Moreover, the amount produced in the last half of the year was substantially in excess of that recovered during the first six months, indicating, according to the department, a definite upward trend in Mexico's production.

Crude oil recovered in Mexico in 1934 amounted to 38,171,946 barrels, or 4,171,946 barrels more than was produced in 1933, and in excess or five million barrels more than was produced in 1932; production in 1931 was 33,038,853 barrels.

Antonio Madrazo, petroleum engineer with the national economy, has prepared for The Oil Weekly the accompanying table which shows Mexico's petroleum production by years from 1901, the year marking the beginning of commercial production in Mexico, through 1934, and the value, in Mexican currency, of years output.

According to Senor Madrazo, 18,005,829 barrels of 1934's recovery were produced during the first six months of the year, and 20,166,117 barrels during the last six months.

Mexico's 38 million-barrel yield clinches her position as the seventh producing nation of the world, her output being exceeded only by that of the United States, Russia, Venezuela, Rumania, Persia, and the Dutch East Indies.

From the standpoint of recovery, February, May, and June were the low months in Mexican activity during 1934, with the peak of recovery coming in August, when 3,434,516 barrels were recovered.

The following table shows Mexico's recovery by months and gives the value of each month's yield:

Months	Barrels	Commercial Value In Mexican Dollars
January	3,113,707	9,678,568.00
February	2,863,088	8,899,110.00
March	3,188,923	10,108,820.00
April	3,206,491	10,447,298.00
May	2,714,827	8,956,955.00
June	2,918,793	10,030,472.00
July	3,303,055	11,322,947.00
August	3,434,516	11,771,113.00
September	3,276,612	11,227,074.00
October	3,393,694	11,616,342.00
November	3,332,926	11,391,393.00
December	3,425,314	11,709,383.00
Totals	38,171,946	127,159,475.00

In registering a 12.2 percent gain in output (world gain was five percent) Mexico completed 144 wells, only 57 of which were commercial producers. These had an aggregate initial production of 33,777 barrels, indicating, as a general thing, the amount of initial required to maintain steady output in Mexico may not be as great as the amount required in other countries. For trend comparison, Mexico completed only 93 wells in 1933.

Mexico divided its failures, or abandoned wells, into three classifications: dry holes, unfinished wells (those which were not completed due to mechanical difficulties), and salt water wells. The total number of failures was 87, and of these 42 were salt water wells.

An accompanying table, prepared by the department of petroleum, gives a condensed summary of Mexican field activities during 1934. It will be noted that August was the high month for completions, even as it was for production.

Light crude (specific gravity less than 0.95) continues to constitute the bulk of Mexico's production, having accounted for 2,466,510 barrels of the total of 3,425,314 barrels recovered during December, which month is fairly representative and is the most recent on which complete, detailed figures are available.

Poza Rica, operated principally by Shell's subsidiary in Mexico and now

PRODUCTION IN MEXICO

Years	Barrels	Commercial Value in Mexican Dollars
1901	10,345	2,069
1902	40,200	8,040
1903	75,375	15,075
1904	125,625	25,125
1905	251,250	50,250
1906	502,500	100,300
1907	1,005,000	201,000
1908	3,932,900	786,580
1909	2,713,500	542,700
1910	3,634,080	726,816
1911	12,552,798	2,510,559
1912	16,558,215	4,139,554
1913	25,696,291	7,708,887
1914	26,235,403	7,870,621
1915	32,910,508	13,164,203
1916	40,545,712	22,300,141
1917	55,292,770	46,998,854
1918	63,828,326	89,655,859
1919	87,072,954	159,036,282
1920	157,068,678	314,137,356
1921	193,397,587	365,873,635
1922	182,278,457	351,674,938
1923	149,584,856	285,920,299
1924	139,678,294	272,084,563
1925	115,514,700	299,268,632
1926	90,420,973	225,122,242
1927	64,121,142	157,544,246
1928	50,150,610	101,945,631
1929	44,687,879	92,025,441
1930	39,529,901	80,932,254
1931	33,038,853	77,529,504
1932	32,805,496	75,687,178
1933	34,000,830	90,636,095
1934 *	38,171,946	127,159,475
Totals	1,737,433,954	3,273,384,404

*Final and Revised.

WELLS COMPLETED IN MEXICO DURING 1934

MONTHS	PRODUCING WELLS		ABANDONED WELLS				Total Number of Finished Wells
	No. of Wells	Initial Daily Production, Barrels	Dry Holes	Unfinished Wells	Salt Water Wells	Total	
January	6	4,969	3	..	1	4	10
February	3	780	7	1	2	10	13
March	1	151	4	..	4	8	9
April	6	780	5	..	2	7	13
May	7	2,195	3	..	4	7	14
June	6	1,025	2	..	7	9	15
July	4	1,252	4	..	5	9	13
August	10	4,950	2	..	3	5	15
September	1	2,724	3	..	4	7	8
October	5	6,032	3	..	5	8	13
November	3	3,642	5	..	1	6	9
December	5	5,277	3	..	4	7	12
Totals	57	33,777	44	1	42	87	144

called the wonder field of Mexico, continues to lead producers there, not only in volume of oil produced but in volume per well. Poza Rica yielded 507,773 barrels in December from only five wells, a daily average production of 3275 barrels per well.

Among the heavy oil districts, the Panuco group shows up as the most important, having recovered 359,807 barrels from 268 wells in December, 1934, an average daily yield of 43.34 barrels per well.

The following table shows wells on production in Mexican fields during December, 1934, and gives the daily average production per well in each of those fields.

ZONES—	Number of Wells On Production	Total Production Obtained During the Month, Barrels	Average Daily Production, Barrels	Average Daily Production Per Well Barrels
HEAVY CRUDE (Specific weight 0.95 or more):				
Altamira	8	16,102	519.43	64.91
Ebano	99	209,551	6,759.74	68.31
El Limon	36	25,223	813.61	22.58
Cacalilao (Panuco)	152	311,179	10,038.02	66.05
Panuco Group	268	359,807	11,606.69	43.34
Topila	53	30,570	986.08	18.62
San Geronimo	3	4,881	157.44	52.46
San Sebastian	1	1,491	48.12	48.12
Totals	620	958,804	30,929.13	49.88
LIGHT CRUDE (Specific weight less than 0.95):				
Comales	3	767	24.78	8.24
Dos Bocas	1	2,120	68.37	68.37
Chiconcillo–San Miguel	9	9,372	302.30	33.59
Tepetate–Chin–Amat–Zacam	102	314,450	10,143.57	99.44
Toteco y Cerro Azul	42	309,506	9,984.05	237.70
Moralillo	1	3,422	110.39	110.39
Tierra Amarilla	8	3,327	107.31	13.40
Alazan	2	17,813	574.65	287.33
Potrero del Llano	10	83,229	2,684.82	268.46
Cerro Viejo	11	31,708	1,022.82	92.97
T. Blanca–Chapap–Alamo	37	288,900	9,319.33	251.85
Jardin	5	5,724	184.61	36.92
Paso Real	28	36,822	1,187.80	42.39
Mecatepec	3	3,189	102.84	34.28
Poza Rica	5	507,773	16,379.79	3,275.96
Furbero	8	4,220	136.18	17.05
Tonala	85	306,744	9,894.99	116.43
El Plan	26	468,561	15,114.87	581.32
Filisola	51	68,863	2,221.38	43.53
Totals	437	2,466,510	79,564.85	182.10
Grand Totals	1,057	3,425,314	110,493.98	104.54

From the foregoing table it will be seen that the average production per well in Mexico is put at 104.54 barrels per day by the government engineers. For the heavy oil district the daily average per well is 49.88 barrels, and for the light oil district it is 182.1 barrels per day.

While the gain in Mexico's production more than kept pace with the gain registered by the world as a whole, the progress made in refinery output was even more pronounced. The gain in volume was 27 percent over 1933, according to Senor Madrazo's letter. Briefly, Mexico's refineries handled 37,331,137 barrels in 1934 as compared with 29,384,823 barrels the year previous. Twenty-three percent of the increase was absorbed by increased domestic demand.

Refining Activities

Government plans for 1935, incidentally, call for further expansion in refinery capacities. The report of the secretariat of national economy states in this connection: "It is important to call attention to this branch of petroleum activities regarding expansion and improvement in the refineries operating in Mexico, transforming them into more efficient plants and working toward the improvement of each product manufactured by those plants."

Mexico's improved situation was reflected in increased exports, more oil having been exported in 1934 than in any year since 1930. World markets last year absorbed 25,012,859 barrels of Mexican crude and refined products.

The following table shows the history of Mexico's exports since 1911:

CRUDE OIL AND ITS DERIVATIVES, NATIONAL PRODUCTION

Exported by Mexico at the beginning of the year 1911 in which the first shipment of Mexican oil was made.

Year	Barrels
1911	901,596
1912	7,729,421
1913	21,330,868
1914	23,365,513
1915	24,769,333
1916	27,268,749
1917	46,023,740
1918	51,767,219
1919	75,549,715
1920	145,508,949
1921	172,268,136
1922	180,866,282
1923	135,606,525
1924	129,699,788
1925	96,517,050
1926	80,722,073
1927	48,421,034
1928	33,262,168
1929	26,601,775
1930	26,835,033
1931	22,490,924
1932	22,580,162
1933	22,016,744
1934	25,012,859

Mexico's attitude toward Iraq oil since the opening of the Iraq line is expressed thus:

"It is not believed generally that the production of Iraq will cause any great disturbance in world markets because distribution of that oil was arranged for countries like France, where such oil can be absorbed easily by increased domestic demands."

Export Gain

At any rate, Mexico's export business for 1934 is credited with a gain of 14 percent over the amount of oil exported in 1933, and the outlook for 1935 is as good, if not better, than it was for 1934.

A forecast for field activity during 1935 in Mexico must come under the head of mere prognostication. But the trend seems to indicate an increase, as does opinion of those on the ground, so to speak. For comparative purposes, it has already been shown that completions in 1934 were in excess of those in 1933. In the matter of drilling permits, 249 were issued in 1934 as against 171 in 1933. The government feels that this increase in permits for new wells is due primarily to increased exploratory drilling and that this type of drilling will continue throughout 1935 on a greater scale.

MARKETS and STATISTICS

Prices Make Further Gains Before Hesitancy Develops

FURTHER advance of refinery prices on gasoline materialized last week. But the upward movement appeared to be of a somewhat artificial nature, involving market-bolstering buying by major companies, rather than the more natural gains that had been made during the several preceding weeks.

In the latter part of the week, consequently, there had developed a general attitude of hesitancy, and of doubt as to whether or not prices would climb much higher.

The levels to which the tank car prices had risen were the highest of the year. They were about the same as those that prevailed a short time in November last year, but were not quite up to the 1934 peak levels, maintained for about a month during May and June.

The prices that prevailed on gasoline in East Texas late in the week were a quarter-cent higher than those of a week earlier, while new quotations in North Texas and Oklahoma were an eighth-cent higher. For all three areas the refinery prices on tenderable U. S. motor gasoline appeared late in the week to be averaging 4, 4½, and 5 cents a gallon for the third, standard, and premium grades. The third grade classification includes material below 62 octane, standard or middle grade 62-67 octane, and premium grade 68-70 octane.

Several times during the week prices appeared to be headed downward, only to be rescued by the buying of maor concerns. That buying seems to be for the purpose of lending support to the market, rather than to actual need for the materials.

East Texas material was available to the northern trade only in limited quantity, and then mostly at 4 cents and in all cases at not less than 3⅞ cents f.o.b. the East Texas refineries.

Third grade U. S. motor fuel could not be bought in Tulsa, meanwhile, for less than 4 cents, despite the fact larger jobbers had almost completely withdrawn from the spot market and were depending largely on contract arrangements, where guaranteed margins have been the practice.

Although market improvement of the past month has been due largely to stricter proration enforcement in the East Texas field, the developments in that area last week were cause for little anxiety. It was indicated that hot oil producing and refining had halted in the previously downward trend, and turned back upward slightly. Whereas the volume had been holding around 25,000 barrels daily the preceding two weeks, it was indicated last week to have risen to possibly 30,000 barrels per day.

It was reported that some laxity had developed in connection with the state control of intra-state oil shipping, and that the effective results of the federal tender board were therefore being to some extent counteracted.

Somewhat over 25 refineries were operating in East Texas the latter part of the week, and it was indicated that only about a third of them were complying with the shipping regulations. Both tank car and truck shipments climbed in volume during the week, while tank truck hauls for the week ending March 25 were estimated at 2,520,000 gallons, listed as gasoline, but actually including a sizeable volume of kerosene, gas oil, distillate, and fuel oil.

Year Begins Profitably

(*Continued from Page 10*)

While the committee favored the corporate divorcement of the industry's different branches as an aid to small refiners and marketers, it also offered additional recommendations as regards those operators. To help refiners, the committee recommended that the oil administration support the present surplus gasoline buying plans of leaders in the industry. The plans call for concerted, informal, big-company buying of gasoline from independent refiners, with the object of stabilizing both tank car and retail gasoline prices at levels proportionate with prevailing crude prices.

If such program fails, it was further recommended, the oil administration should exert influence toward reducing crude prices to conform with the refined product prices. Current gasoline prices, it was stated, would call for a 20-cent crude price cut, under the oil code's provision for a minimum per-barrel crude price 18.5 times the per-gallon gasoline price at refineries.

The concerted buying of the major companies was apparently the dominant factor in further rising of tank car prices the past week. Such planned buying was initiated about two weeks ago, and it has served to extend an upward price movement which had already begun, but which was beginning to lag. The gasoline prices advanced a quarter cent a gallon in East Texas last week, and an eighth cent in North Texas and Oklahoma. Late in the week the spot tank car prices were averaging 4, 4½, and 5 cents a gallon in all those areas, for the third, standard, and premium grades. Those prices were the best of the year, and the only time that higher quotations prevailed in 1934 was during a period of about four weeks in May and June. Incidentally, concerted surplus gasoline buying was in progress at that time.

East Texas Hot Oil Volume Is Greater

EXPANSION of tank truck shipments of refined products by East Texas plant owners allegedly using crude that fails to comply with the requirements of the tender boards boosted the volume of illegal production originating in the field the past week. Estimates on the amount of illicit production ranged from 20,000 to 30,000 barrels daily, with the later figure accepted most generally. Mid-week check on the 25 operating plants credited 11 with processing tendered oil, while 14 supposedly were operating on contraband products. Current market price on illegal crude production averages 25 cents per barrel, although the majority of the plants running on hot oil are drawing from their own wells.

Tank truck shipments of refined products from the district during the week ending March 25 amounted to an aggregate of 2,520,000 gallons. According to estimates the bulk of this movement was gasoline, although considerable volume of burning oils is included, as truckers can obtain fuel oil derived from illicit crude at 20 cents per barrel. This compares to a firm price of 65 cents per barrel for tender

supported fuel. Gasoline purchases by majors were partially responsible for a gain of 204 cars in the quantity of tank car shipments during the week ending March 24. Greater gains will occur for some weeks hence by reason of new buying by majors and the release of several large batches of stored oil held by refiners who were successful in obtaining federal court authorizations in face of protests by the federal tender board.

East Texas Tank Car Shipments

Week Ending March 24, 1935

Products—	No. Cars	Estimated Gallons
Gasoline	580	4,692,774
Fuel Oil	259	2,517,194
Casinghead Gasoline	130	1,158,722
Distillate	74	601,467
Kerosene	59	478,673
Residuum	40	349,957
Gas Oil	25	203,972
Topped Crude	15	139,976
Naphtha	4	32,500
Total	1,186	10,175,235
Total Prev. Week	982	8,592,943
Interstate	492	
Intrastate	395	
Coastwise	94	
Total	1,186	
Tendered	1,092	
Without Tenders	94*	
Total	1,186	

* Fuel oil moved under Federal Court Injunction.

California Likes Agency Agreement

THE retail gasoline market situation in Southern California is showing slight improvement, but the chance for a retail price break is still a possibility. Members of the Pacific Coast Petroleum Agency have been holding frequent meetings, discussing the price situation as well as the question of whether or not the agency will continue in operation after June 15, date of expiration of the present agreement.

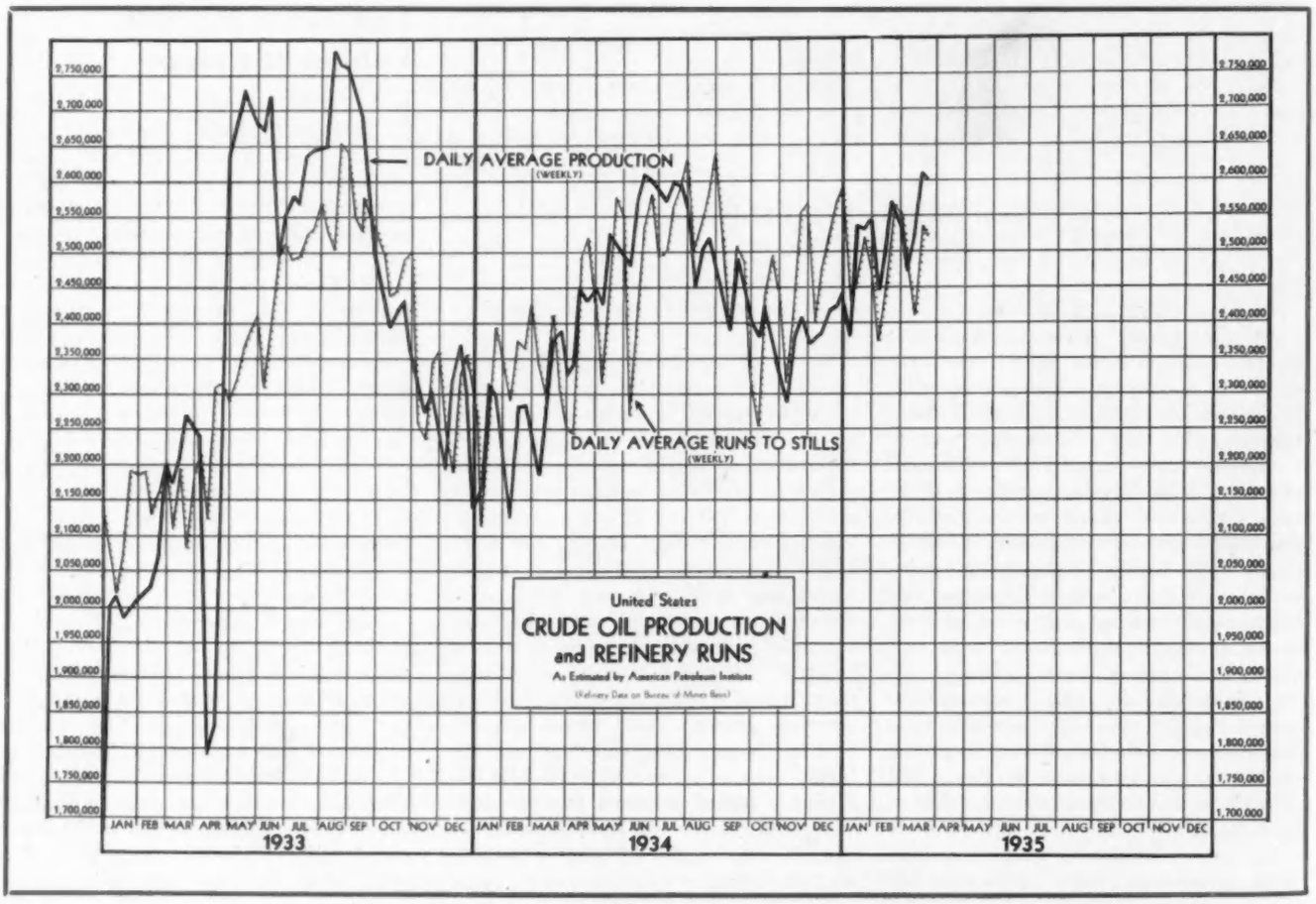
Several of the more important sales department officials of the various companies feel the agency has been the big reason for the fairly normal price structure for several months past, and it is likely the members will be unanimous in agreeing to continue the plan another year.

The agency is still faced with the demand on the part of the independent service station owners for the right to undersell a half-cent the large company controlled stations, and the small service station operator seems to feel he will win his fight.

Under the agency agreement, member refiners are forbidden to deliver gasoline to stations selling at cut prices, thus building up what some call a "black list." Federal authorities have been appealed to by the independents in an effort to stop this practice and rumors are current that federal investigators have been carefully looking into all phases of the situation.

The tanker strike has aggravated the general market situation, without causing any real trouble so far. But the movement of petroleum products out of the Los Angeles and San Francisco harbors will show a decrease in March, but just how large the decline will be is largely a matter of guess work. If the decline is large, it is almost certain March will show a gain in stocks for practically all products.

All grades of fuel oils are showing



strength with quotations advancing slightly. This is especially true with reference to Diesel and gas oils, to some extent due to scarcity.

They are quoting bunkers at $1.15 at New York harbor, while this product is quoted at 70 to 80 cents by major companies at Los Angeles Harbor. The tanker rate to New York is 60 cents a barrel. Fuel oil can be moved from the Gulf in tankers to New York for 20 cents a barrel.

Oklahoma April Allowable Boosted

Oklahoma City.—The Oklahoma Corporation Commission and the state allocation committee boosted April allowable for Oklahoma pools to 495,547 barrels daily in a meeting held on Tuesday, March 26. This is an increase of 4547 barrels over the March allowable and 2247 barrels in excess of the federal allocation. This move was made in view of the fact that several of the older prorated pools have within the past few months consistently failed to make their allowables, a condition which has resulted in underproducing the federal allocation. The Earlsboro group of the Seminole district will be allowed to produce to capacity during April and will be removed from the prorated list if their performance is as expected. This group includes the Earlsboro, Earlsboro Townsite, East Earlsboro, East Earlsboro Extension, South Earlsboro and the Calvin sand production of East Earlsboro.

One of the important moves of the commission will be to order all Wilcox sand underproduction in the Oklahoma City pool cancelled as of April 1 and the placing of that zone on a lease basis for proration purposes.

Moving Untendered Oil by Truck Would Be Penalized

Austin, Texas.—The House Committee on Oil Gas and Mining has passed out with a favorable report a bill by Representative J. C. Duvall which would provide severe penalties for truck operators moving untendered oil.

The measure approved closely resembles the substitute bill drawn by Assistant Attorney General Effie Waldman. It provides penalties ranging from $25 to $200, and possible confiscation of the product transported. These cases would fall within the jurisdiction of a justice of the peace court.

The original bill by Duval provided for confiscation of both truck and cargo.

Production Drops But Still Above Allowable

UNITED STATES crude oil production last week was 37,100 barrels per day lower than in the preceding week, having averaged 2,549,350 barrels daily. The reduction was not sufficient, however, to bring the output within the allowable set by the federal government. The new production rate exceeded the allowable by 29,050 barrels daily.

The excessive production was partially justified, however, by the fact Texas was above its allowable by reason of the sliding allowable prescribed by the state authorities, the permitted production gradually increasing toward the month's end as new wells are completed. Texas averaged 1,042,500 barrels production daily, a gain of about 8000 barrels over the previous week's average, and about 22,000 barrels more per day than the federal allocation.

California production dropped 28,000 barrels, having averaged 472,000 barrels. The state fell 20,600 barrels below its federal allocation. Fields showing important declines included Long Beach, Huntington Beach, and Midway-Sunset.

Oklahoma production also dropped substantially, averaging 492,650 barrels daily, compared with 514,550 barrels a day the previous week. The new production rate was only 1650 barrels above the state's federal quota. Both Oklahoma City and the Seminole area recorded declines.

Kansas output rose nearly 2000 barrels, having averaged 154,900 barrels daily, or about 15,000 barrels daily more than the federal allocation.

Louisiana production declined 1400 barrels, in averaging 118,300 barrels daily. The federal quota was 110,500 barrels per day.

The above figures do not include surreptitiously produced oil. Such production last week, primarily in the East Texas field, was indicated to be around 30,000 barrels daily, or about 5000 barrels per day more than in the previous week.

New Code Bill Keeps Oil Control Feature

Washington, March 29.—Extension for two years of the Industrial Recovery Act is provided for in legislation today introduced in Congress by Senator Pat Harrison of Mississippi. The bill, however, materially amends the present law so as to make codes necessary only for industries engaging in interstate commerce or whose activities materially affect interstate commerce, and sharply restricting the exemption from the anti-trust laws.

The measure provides that all existing codes shall be extended for a 90-day period, within which they are to be thoroughly surveyed to determine what changes must be made to have them conform to the anti-monopoly and other provisions of the new law.

While the legislation provides that only interstate industries shall be codified, the way is paved for retention under the oil code of service stations, as establishments which "substantially affect" interstate commerce. Codes, under the proposed law, would not be permitted to promote

United States Crude Oil Production

Esmitates Compiled by The OIL WEEKLY

District or State	Barrels Daily for Week Ending Mar. 30	Mar. 23
TEXAS—		
Texas Panhandle	63,100	61,500
North Texas	57,500	57,500
West Central Texas	25,800	25,700
West Texas	152,800	152,700
East Central Texas	52,400	52,400
*East Texas Field	448,700	*445,500
South Texas	60,100	59,800
Texas Gulf Coast	182,100	179,100
*Total Texas	1,042,500	1,034,200
OKLAHOMA—		
Oklahoma City	146,875	162,975
Seminole Area	123,700	130,050
Tatums	5,200	5,250
Lucien	8,025	11,400
Fitts	14,625	12,825
Others	194,225	203,450
Total Oklahoma	492,650	514,550
KANSAS—		
Ritz-Canton	9,275	9,325
Voshell	6,525	6,425
Nikkel-Hollow	9,525	10,425
Sedgwick	10,825	10,400
Burrton-Haury	25,150	22,700
Others	93,600	93,775
Total Kansas	154,900	153,050
LOUISIANA—		
North Louisiana	22,100	22,500
Louisiana Gulf Coast	96,200	97,200
Total Louisiana	118,300	119,700
ARKANSAS	31,100	30,950
CALIFORNIA—		
Long Beach	60,000	65,000
Santa Fe Springs	37,500	39,000
Huntington Beach	38,500	42,500
Dominguez	22,000	22,000
Inglewood	10,000	11,500
Ventura Avenue	13,000	14,000
Seal Beach	7,000	7,000
Midway-Sunset	47,500	51,500
Elwood	10,000	10,000
Kettleman Hills	64,500	64,000
Mountain View	10,500	11,500
Playa del Rey	16,000	15,500
Others	136,500	146,500
Total California	472,000	500,000
MOUNTAIN STATES—		
Wyoming	32,500	31,800
Montana	10,500	10,900
Colorado	5,100	5,200
Total Rocky Mountain States	48,100	47,900
NEW MEXICO	47,300	47,800
EASTERN STATES	106,700	105,800
MICHIGAN	35,800	32,500
*Total United States	2,549,350	2,586,450
*Surreptitiously produced oil in East Texas, not included in above figures, estimated at	30,000	25,000
Grand total including surreptitious production	2,579,350	2,611,450

Crude Runs to Stills; Finished & Unfinished Gasoline; Gas & Fuel Oil Stocks, and Cracked Gasoline Production, Week Ended March 23, 1935

(Figures in thousands of barrels of 42 gallons each)

DISTRICT	Daily Refining Capacity of Plants			Crude Runs to Stills		Stocks of Finished Gasoline			(a) Stocks of Unfinished Gasoline	(b) Stocks of Other Motor Fuel	Stocks of Gas and Fuel Oil	Daily Charging Capacity of Cracking Units			Cracked Gasoline Production
	Potential Rate	Reporting		Daily Average	% Operated	At Refineries	Bulk Term., in Trans. & Pipe Lines	Total at Refys., Term., etc.				Potential Rate	Reporting		Daily Average
		Total	%										Total	%	
East Coast	582	582	100.0	422	72.5	7,462	10,248	17,710	934	160	9,894	496	471	95.0	71
Appalachian	150	140	93.3	105	75.0	1,274	860	2,134	334	120	810	69	69	100.0	22
Ind., Ill., Ky	446	422	94.6	335	79.4	6,686	3,036	9,722	735	50	4,322	325	309	95.1	100
Okla., Kans., Mo.	461	386	83.7	257	66.6	3,544	2,184	5,728	746	390	3,946	256	238	93.0	60
Inland Texas	351	167	47.6	103	61.7	1,331	116	1,447	257	680	1,883	82	66	80.5	27
Texas Gulf	601	587	97.7	527	89.8	6,464	256	6,720	1,664	215	8,461	358	355	99.2	92
Louisiana Gulf	168	162	96.4	110	67.9	996	470	1,466	247	.....	3,547	71	71	100.0	13
North La.—Ark.	92	77	83.7	39	50.6	186	89	275	46	120	347	41	38	92.7	9
Rocky Mountain	96	64	66.7	43	67.2	965	.....	965	111	60	750	46	42	91.3	12
California	848	822	96.9	443	53.9	8,950	1,754	10,704	1,014	2,530	65,391	209	209	100.0	52
TOTALS WEEK: March 23, 1935	3,795	3,409	89.8	2,384	69.9	37,858	19,013	56,871	6,088	4,325	99,351	1,953	1,868	95.6	458
March 16, 1935	3,795	3,409	89.8	2,405	70.5	37,724	(c)19,294	57,018	6,099	(d)4,285	99,025	1,953	1,868	95.6	474

Below are set out estimates of Crude Runs and Cracked Gasoline Production on B. of M. Basis for Week Mar. 23, 1935, compared with March 1934 Bureau figures.

Estimate B. of M. Basis March 23, 1935	2,520		510
Estimate B. of M. Basis March 16, 1935	2,540		525
U. S. B. of M. March 1934: Daily Average Crude Runs	2,316	U. S. B. of M. March 1934: Daily Average Cracked Prod.	446

(a)Amount of Unfinished Gasoline contained in Naphtha Distillates.
(b)Estimated. Includes Unblended Natural Gasoline at Refineries and plants; also Blended Motor Fuel at plants.
(c)On New basis. Stocks comparable with subsequent weeks are: Ind., Ill., Ky., 3,236,000 bbls.; Okla., Kans., Mo., 2,134,000 bbls.
(d)On New basis. Stocks comparable with subsequent weeks are: Inland Texas, 700,000 bbls.

or sanction the creation or maintenance of monopolies or of practices destructive to fair competition, eliminate or opress small industries or discriminate against them, or promote or sanction devices for fixing prices or controlling production or distribution which are restrictive of fair competition.

While passage of the Connally bill made retention of the President's authority to deal with hot oil, granted in the present law, unnecessary, the new bill continues the provisions authorizing the President to deal with pipe lines, both by having the Interstate Commerce Commission prescribe rules and rates and by instituting proceedings to divorce pipe lines from holding companies.

Comparison of Permits Granted for New Wells

STATE—	Week Ending Mar. 23	Total this Mo.	Total this Year	Total this Date Last Year	1934 Year Total
Arkansas.	2	9	40	11	100
California	8	72	183	113	629
Louisiana.	23	64	176	176	799
Kansas...	46	126	352	190	1,015
Michigan.	6	26	88	95	460
Oklahoma	49	189	495	455	2,045
Texas....	230	1,086	3,079	1,978	10,550
Total..	364	1,572	4,413	3,018	15,598

Wind Demolishes Texas Tank Farm

Del Rio, Texas.—One of the largest crude tank farms in West Texas was almost completely demolished on March 21 when a violent wind storm swept across Illinois Pipe Line Company's pump station and storage center near here, leaving 21 out of a total of twenty-five 80,000-barrel steel tanks caved in. The tanks were erected in late summer, 1927, and accomodated Yates field crude produced by Marathon Oil Company and its predecessors while awaiting the extension of the Illinois Oil Company's trunk line to a point near San Antonio, where connection is made with the Humble Pipe Line Company. Reports indicate that the damaged tanks, which were empty at the time of the storm, are beyond repairs.

East Texas Excess in February 20,000 Barrels

Kilgore, Texas.—Accounted for excess crude production in the East Texas field during February averaged 20,012 barrels daily as compared to a daily average of 20,835 barrels in January, according to an auditor's report prepared by the Railroad Commission. The report estimates over production for February as being 1.24 barrels daily average per well ,as compared to a daily average of 1.32 barrels per well the previous month. However, the activities of producers and refiners that refuse to make accurate reports to the commission are not fully incorporated in the monthly statements. For this reason a greater volume of excess production prevails.

Allowable production for the field during February average 438,783 barrels, or a total of 12,285,914 barrels, as compared to a daily average allowable of 429,132 barrels, or an aggregate of 13,303,105 barrels in January. There were 15,808 completed oil wells, including 2276 marginal wells on January 31, while on February 28 the field was credited with 16,138 producers, including 2338 marginal, or 20-barrel daily quota wells.

CHESTER D. WHORTON, geologist for Godfrey L. Cabot, Inc., has moved his office from Coudersport, Pa., to Olean, New York.

CRUDE OIL PRICE QUOTATIONS

(Figures Represent Basic or Flat Prices—Revised to March 29, 1935)

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Oklahoma-Kansas	28—$ .84	2¢	40—$1.08	9-29-33
N. and N.-C. Texas	28— .79	2¢	40— 1.03	9-29-33
Texas Panhandle				
Gray County	34— .79	2¢	40— .91	9-29-33
Carson-Hutchinson	34— .69	2¢	40— .81	9-29-33
West Texas				
Ector, Pecos, Wk'ir	*.75			9-29-33
Crane, Upton, Howard and Glasscock	*.70			9-29-33
East Texas	*1.00			9-29-33
Texas Gulf Coast				
Conroe	35— 1.09	2¢	40— 1.19	9-29-33
Tomball	*1.15			9-29-33
Cleveland	*1.00			1-11-34
†Goose Creek, Hull Liberty, Orange, Pierce Junction, Moss Bluff, Raccoon Bend, Sour Lake, Spindletop, Sugarland, West Columbia, Humble, Rabbs Ridge	Below 20— .82	2¢	34— 1.12	9-29-33
South and S.W. Texas	Below			
Refugio (Light)	20— .82	2¢	34— 1.12	9-29-33
Refugio (Heavy)	*.85			9-29-33
Saxet	*.85			9-29-33
Mirando	*.80			9-29-33
Pettus	*1.05			9-29-33
Salt Flat	*.87			9-29-33
Darst Creek	*.87			9-29-33
Arkansas				
El Dorado (Light) and Rainbow	29— .79	2¢	40— 1.03	3-17-34
El Dorado East Field and Smackover	*.70			9-29-33
North Louisiana	29— .79	2¢	40— 1.08	9-29-33
Urania	*.85-*.87			1- 1-34
SouthLouisiana	Below			
Lockport	20— .80	2¢	34— 1.10	9-29-33
Iowa, Cameron Mds.	Below 20— .70	2¢	34— 1.00	9-29-33
Rocky Mountain States				
Salt Creek	29— .84	2¢	40— 1.08	9-29-33
Elk Basin	*1.17			9-29-33

*All gravities—flat rate.
†Gulf Coast prices as posted by Humble Oil & Refining Company.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Grass Creek (Light)	*1.17			9-29-33
Big Muddy	*$1.01			9-29-33
Rock Creek	*1.02			9-29-33
Sunburst	*1.35			9-29-33
Lance Creek	*1.02			8-25-33
Osage	*.62			8-25-33
Cat Creek	*.45			8-25-33
Pondera	*.65			8-25-33
Hog Back, N. M.	*1.00			9- 8-33
Lea County, N. M.	*.75			9-29-33
Mid-West States				
Lima	*1.15			2- 1-35
Illinois	*1.13			1- 5-34
Princeton	*1.13			1- 5-34
Western Kentucky	*1.08			5-26-34
California				
Signal Hill	14— .65	1¢	16— .66	9- 6-33
	17— .69	2¢	22— .84	9- 6-33
	23— .88	3¢	30— 1.09	9- 6-33
Seal B., Alamitos Hts.	19— .65	3¢	20— .68	9- 6-33
	21— .72	4¢	22— .76	9- 6-33
	23— .81	4¢	26— .93	9- 6-33
	27— .98	4¢	30— 1.10	9- 6-33
Huntington Beach	14— .65	4¢	15— .69	9- 6-33
	16— .72	3¢	19— .81	9- 6-33
	20— .83	3¢	28— 1.07	9- 6-33
	20— 1.09	3¢	30— 1.12	9- 6-33
Inglewood	14— .65	4¢	16— .73	9- 6-33
	17— .76	4¢	18— .80	9- 6-33
	19— .83	4¢	20— .87	9- 6-33
	21— .90	4¢	22— .94	9- 6-33
	23— .97	4¢	24— 1.01	9- 6-33
Playa del Rey	14— .65	1¢	15— .66	9- 6-33
	16— .69	4¢	17— .73	9- 6-33
	18— .76	4¢	19— .80	9- 6-33
	20— .83	4¢	21— .87	9- 6-33
	22— .90	4¢	23— .94	9- 6-33
	24— .97	3¢	25— 1.00	9- 6-33
			26— 1.04	9- 6-33
Olinda-Brea Canyon	14— .65	4¢	16— .73	9- 6-33
	17— .76	3¢	28— 1.10	9- 6-33
Athens-Rosecrans Domingues	23— .83	3¢	24— .86	9- 6-33
	25— .90	4¢	26— .94	9- 6-33
	27— .97	3¢	29— 1.04	9- 6-33
	30— 1.08	4¢	31— 1.12	9- 6-33
			32— 1.15	9- 6-33
Elwood (fob ship)	33— 1.03	3¢	37— 1.15	9- 6-33
Torrance	14— .65	1¢	15— .66	9- 6-33
	16— .69	3¢	20— .81	9- 6-33
	21— .83	3¢	26— .98	9- 6-33

*All gravities—flat rate.

DISTRICT	Low Grav.	Dif.	High Grav.	Date
Richfield	15—$ .65	2¢	16—$ .67	9- 6-33
	17— .70	4¢	20— .82	9- 6-33
	21— .85	4¢	22— .89	9- 6-33
	23— .93	4¢	24— .97	9- 6-33
	25— 1.00	4¢	27— 1.08	9- 6-33
	28— 1.11	4¢	29— 1.15	9- 6-33
Whittier-LaHabra	15— .65	3¢	18— .74	9- 6-33
	19— .78	3¢	24— .93	9- 6-33
Montebello	19— .65	1¢	20— .66	9- 6-33
	21— .69	3¢	22— .72	9- 6-33
	23— .76	4¢	24— .80	9- 6-33
	25— .85	4¢	26— .89	9- 6-33
Coyote Hills	16— .65	3¢	19— .74	9- 6-33
	20— .78	3¢	29— 1.05	9- 6-33
	30— 1.09	3¢	34— 1.21	9- 6-33
Santa Fe Springs	21— .72	4¢	23— .76	9- 6-33
	23— .79	4¢	25— .87	9- 6-33
	26— .90	4¢	28— .98	9- 6-33
	29— 1.01	4¢	30— 1.05	9- 6-33
	31— 1.08	4¢	33— 1.16	9- 6-33
	34— 1.19	4¢	35— 1.23	9- 6-33
	36— 1.26	4¢	38— 1.34	9- 6-33
New Hall, McKittrick, Kern River	14— .57		19— .57	9- 6-33
Midway-Sunset, Elk Hills, Buena Vista Hills	17— .57	4¢	18— .61	9- 6-33
	19— .64	3¢	22— .73	9- 6-33
	23— .77	4¢	33— 1.17	9- 6-33
Lost Hills	17— .57	4¢	21— .73	9- 6-33
	22— .76	3¢	30— 1.00	9- 6-33
Coalinga	17— .57	1¢	18— .58	9- 6-33
	19— .62	3¢	21— .68	9- 6-33
	22— .72	3¢	25— .81	9- 6-33
Wheeler Ridge	17— .57	1¢	18— .58	9- 6-33
	19— .61	3¢	25— .79	9- 6-33
Kettleman Hills	23— .93	3¢	39— 1.11	9- 3-33
Pennsylvania				
Bradford	*2.35			2- 4-35
Sw Pa. Pipe Line	*2.02			2- 4-35
Eureka Pipe Line	*1.97			2- 4-35
Buckeye Pipe Line	*1.87			2- 4-35
Corning Grade	*1.32			10- 2-33
Michigan				
Central Michigan	*1.20			9-30-33
Muskegon	*.70-1.00			12-31-32
Canada				
Petrolia	*2.10			9- 9-33
Oil Springs	*2.17			9- 9-33

*All gravities—flat rate.

Summary of Wells Completed in the United States
Week Ending March 23, 1935

	Completions	Oil Wells	Gas Wells	Failures	Initial Production	Total Completions 1935	Total Completions this date 1934
Alabama	1	...	...	1	.....	2	1
Arkansas	1	...	...	1	.....	44	17
California	10	9	1	...	5,280	164	74
Colorado	...	...	...	...	.....	3	4
Illinois	...	...	...	...	.....	6	2
Indiana	...	...	...	...	.....	36	45
Kansas	28	21	...	7	18,755	284	197
Kentucky	...	...	...	...	.....	20	24
Louisiana	15	4	...	11	1,050	159	170
Michigan	4	1	2	1	75	70	104
Mississippi	1	...	...	1	.....	6	6
Montana	1	1	...	...	75	12	23
New Mexico	2	1	...	1	75	58	22
New York	...	...	...	...	.....	...	3
Ohio	15	1	8	6	3	327	217
Oklahoma	46	35	2	9	120,223	484	435
Pennsylvania	2	...	1	1	.....	30	72
Texas	226	178	8	40	717,615	2,438	2,046
Utah	...	...	...	...	.....	...	3
West Virginia	10	2	4	4	6	128	122
Wyoming	1	...	1	...	.....	7	6
Total this week	363	253	27	83	863,157	4,278	3,589
Total last week	3,915	2,559	357	999	7,397,995	3,915	3,249
Total this year	4,278	2,812	384	1,082	8,261,152	...	...

MAJOR PRICE CHANGES

	Penna. (Nat. Tr.)	Mid-Cont. (36 Gr.)	Calif. (26 Gr.)
March 5, 1933	.....	.....	Cut 24.
May 2, 1933	.....	Cut 19.	.....
May 9, 1933	Cut 20.	.....	.....
May 22, 1933	Up 10.	.....	.....
June 19, 1933	Up 10.	Up 19.	.....
June 26, 1933	Up 10.	.....	Up 9-12
July 6, 1933	Up 13.	Up 10.	.....
July 17, 1933	Up 15.	.....	.....
July 28, 1933	Up 15.	.....	.....
August 11, 1933	Up 10.	.....	.....
August 24, 1933	.....	Up 10.	.....
August 30, 1933	Up 15.	.....	.....
September 6, 1933	Up 10.	Up 10.	Up 15.
September 8, 1933	.....	Up 15.	.....
May 1, 1934	Up 10.	.....	.....
November 6, 1934	Cut 25	.....	.....
December 6, 1934	Cut 25.	.....	.....
January 4, 1935	Up 15.	.....	.....
February 4, 1935	Up 15.	.....	.....

CRUDE PRODUCTION TAXES

Oklahoma—Three percent of gross value less royalty interest.

Texas—Two cents or 2 percent, whichever is higher.

Louisiana—From four to 11 cents a barrel, depending upon gravity.

Arkansas—2.6 percent of gross market values.

Montana—Three percent of gross value at well and ½-cent per barrel.

Wyoming and New Mexico—Production tax based upon state and county assessments.

California—.66443 mills per barrel of oil produced and 17.39 cents per acre on proved oil lands.

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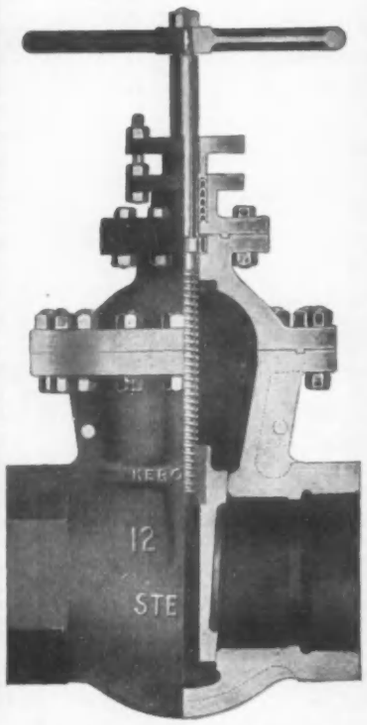

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First Quarter Results in Oil Industry Favorably

RELATIVELY high demand for oils and successful balancing of supply with that demand has resulted in generally satisfactory operations in the petroleum industry during the first three months of this year. It is indicated, moreover, that similar balance between demand and supply will continue through the second quarter, extending the present generally profitable operating results.

Featuring the statistics of the petroleum industry in the opening quarter of 1935 are material increases in production and drilling, as compared with the corresponding three months last year.

Those increases are significant. For the higher production was a reflection of greater demand for oils, and the increased drilling was a reflection of a relatively favorable market situation.

Despite the higher crude production for the 1935 first quarter, output was under strict control during the period, and continued effective restraint appears in prospect in the second quarter. Coupled with regulation of domestic crude production there has also been continued restriction of imports. The net result has been that in the 1935 first quarter the stocks situation has been kept favorable.

In fact, by reason of the rigid control of production and imports during the past year, stocks of oils in storage are now far below the quantities on hand a year ago, being the lowest for about eight years.

The 1935 first quarter itself is not due credit, however, for improvement in the stocks situation. During the period crude oil stocks remained practically unchanged, while gasoline stocks increased nearly 13,000,000 barrels. That increase was, however, a normal seasonal change, in preparation for expected higher gasoline consumption in the spring.

Stocks Below Year Ago

The really significant and encouraging feature of the stocks situation is that there are around 30,000,000 barrels less of all oils in storage at the close of the 1935 first quarter than there were a year ago. Standing currently around 338,000,000 barrels, crude oil stocks are about 14,000,000 barrels lower than a year ago. Gasoline stocks, now slightly under 57,000,000 barrels, are practically the same as a year ago. Other products account for the remaining 15,000,000 barrels or so reduction of stocks since this time last year. Official figures are not available on the current total of all oils in storage in the United States, but on February 1 the total of 565,397,000 barrels was 32,338,000 barrels lower than the total a year previously.

At the current levels, the country's stocks of all oils are not only materially below the quantities on hand a year ago, but the lowest since 1926. Thus there has been during the past year a continuation of the withdrawals from storage, which have been consistently in progress for several years. The fact these declines have materialized is striking evidence, of course, that results have been conspicuously successful in curbing domestic crude production and importation of foreign oils.

Production Higher

During the first three months of 1935, United States crude oil production aggregated 227,231,811 barrels, or 11.3 percent more than the 204,131,668 barrels produced in the 1934 first quarter. (These figures are based on the weekly estimates of the American Petroleum

Wells Completed in the United States
(Including oil wells, gas wells, and dry holes)

Month	Daily Average
January, 1933	30.0
February	30.6
March	26.6
April	25.5
May	25.6
June	21.1
July	23.1
August	30.7
September	36.5
October	40.9
November	46.9
December	47.7
January, 1934	39.7
February	38.1
March	40.6
April	44.0
May	50.7
June	51.5
July	*53.6
August	51.3
September	43.2
October	49.6
November	49.9
December	48.3
January, 1935	47.9
February	49.6
March	48.8

*Highest since July, 1930, when completions averaged 76.6 daily. Average dropped in August, 1930, to 52.4 and remained below that figure until July, 1934.

Monthly Summary of United States Drilling and Production, March, 1935

STATE	MONTH OF MARCH, 1935						CUMULATIVE, JANUARY THROUGH MARCH, 1935					
	Completions	Oil Wells	Gas Wells	Failures	Initial Prod. Bbls. Daily	*Total Bbls. Oil Prod.	Completions	Oil Wells	Gas Wells	Failures	Initial Prod. Bbls. Daily	*Total Bbls. Oil Prod.
Oklahoma	152	97	9	46	154,006	15,097,650	436	272	26	138	537,769	43,392,800
Kansas	94	67	1	26	63,864	4,576,900	254	190	5	59	160,295	12,889,200
Texas	830	647	17	166	2,529,649	31,964,350	2,355	1,744	60	551	6,784,611	91,583,550
Louisiana	47	29	5	13	11,993	3,713,700	157	81	13	63	35,964	10,392,550
Arkansas	11	3	1	7	1,170	953,850	48	24	1	23	5,475	2,803,700
Southeastern States	2	.....	.....	2	.....	.....	5	.....	1	4	.....	.....
Eastern States	113	21	60	32	255	3,265,100	511	148	237	126	3,519	9,391,350
Michigan	20	10	5	5	615	1,031,800	71	45	10	16	7,829	3,053,500
Rocky Mountain States	10	9	.....	1	3,352	1,464,000	23	17	.....	6	6,589	4,345,250
New Mexico	24	18	1	5	46,100	1,481,250	70	48	4	18	99,490	4,274,000
California	64	58	1	5	67,595	15,584,200	201	159	4	38	176,643	45,105,911
Total	1,367	959	100	308	2,878,599	79,132,800	4,131	2,728	361	1,042	7,818,184	227,231,811

*Preliminary, subject to revision.

Institute, which are exclusive of surreptitiously produced oil.)

The higher crude production in this year's first quarter was largely, although not entirely, a reflection of greater demand. For output in the first quarter of 1934 had been somewhat under the actual demand at that time, while the 1935 first quarter production has been close to, if not above, the demand. (Crude oil stocks remained practically unchanged in each first quarter. But refined oil stocks declined last year, while some increase is indicated for the 1935 first quarter.)

Markets Show Improvement

Favorable statistical conditions are not always accompanied, of course, by the healthy markets they tend to promote. But the advantageous circumstances now prevailing are having the normal effect of engendering market strength. Today's markets are generally stronger and higher than those of a year ago.

Crude oil prices are unchanged, but now, as a year ago, are stabilized at relatively high and profitable levels. Product prices at the refineries continue low in relation to the crude prices, but have been higher on the average in the opening quarter of this year than in 1934. They have been further improving lately, moreover, and promise to show additional gains in coming weeks. Service station and other retail prices are also generally better this year than last, the 1934 first quarter having been a period of gasoline price wars on the Pacific Coast and in Texas and adjacent states.

The oil industry in general showed profits in the first quarter of 1934, the results having represented the best first quarter record since 1930. Since conditions have been as good or better this year, it is indicated that the 1935 first quarter earnings will be similarly encouraging, and that the 1935 second quarter will prove comparable with the likewise profitable 1934 second quarter.

Because of the relatively high crude oil prices, especially favorable results have been obtained by producing companies and integrated concerns with extensive producing properties. Difficulties and losses have been the lot, meanwhile, for independent refiners and for integrated companies making heavy purchases of crude. In marketing operations, the results have been more satisfactory than in refining, but perhaps less profitable than in producing.

The relatively favorable conditions

United States Production

(Based on American Petroleum Institute estimates, which do not include oil which may have been surreptitiously produced)

Month	Daily Average (Barrels)	Federal Agency Allowable
Aug., 1933	2,748,100	.....
September	2,568,250	2,413,700
October	2,392,900	2,338,500
November	2,267,243	2,338,500
December	2,266,426	2,210,000
Jan., 1934	2,233,505	2,183,000
February	2,239,070	2,183,000
March	2,339,950	2,282,800
April	2,420,950	2,366,200
May	2,575,380	2,366,200
June	2,588,100	2,528,300
July	2,560,550	2,530,300
August	2,475,300	2,449,300
September	2,431,950	2,341,700
October	2,364,150	2,325,800
November	2,375,400	2,340,300
December	2,414,600	[1]2,307,000 [2]2,460,300
Jan., 1935	2,500,850	2,460,300
February	2,521,250	2,526,100
March	[3]2,552,671	2,520,300

[1]December 1-16.
[2]December 17-31.
[3]Preliminary, subject to revision.

Crude Oil Stocks

(Since Oil Code Inauguration)

Bureau of Mines figures as compiled monthly, comprising all crude in storage in the country.

At end of:	Total Bbls. in storage
August, 1933	360,001,000
September	359,979,000
October	356,885,000
November	355,614,000
December	355,394,000 *354,305,000
January, 1934	353,642,000
February	531,641,000
March	354,067,000
April	354,350,000
May	355,883,000
June	357,239,000
July	355,260,000
August	350,838,000
September	348,937,000
October	346,415,000
November	341,165,000
December	337,254,000
January, 1935	338,174,000

*On revised basis, 1,089,000 barrels having been transferred from crude to fuel oil in California.

Trend of stocks situation since end of January, figures being from weekly reports to federal government, embracing 98 percent of total stocks, excluding those of producers.

January 26, 1935	320,570,000
February 23	321,367,000
March 9	322,048,000

Motor Fuel Stocks

(American Petroleum Institute figures, as shown in weekly reports)

Date	Motor Fuels stocks, bbls.
September 9, 1933	50,913,000
September 30	50,457,000
October 28	52,727,000
November 25	51,934,000
December 30	51,580,000
January 27, 1934	50,229,000
February 24	55,976,000
March 24	57,879,000

After March 24, 1934, figures shown represent stocks of finished gasoline, to be marketed as motor fuels, including natural gasoline which has been blended, and gasoline made from refinery still gases.

March 24	57,011,000
March 31	57,098,000
April 28	56,011,000
May 26	54,493,000
June 30	51,405,000
July 28	48,597,000
August 25	46,120,000
September 29	43,850,000
October 27	41,993,000
November 17	*39,892,000
December 1	40,831,000
December 29	43,969,000
January 26, 1935	47,888,000
February 23	54,399,000
March 2	55,654,000
March 23	56,871,000

*Low point of year.

and prices that have existed in the first three months of 1935 have naturally tended to stimulate drilling activity. During the quarter, new wells completed in the United States were 14.3 percent more numerous than in the corresponding period last year. The completions in the first quarter this year aggregated 4131, compared with 3614 in the similar period of 1934. (Both figures represent the totals of oil wells, gas wells, and dry holes.) The proportion of productive oil wells among the total was about the same this year as last, and the average initial daily production per well was also about the same.

Each of the four principal oil producing states, Texas, California, Oklahoma, and Kansas, furnished more completions in the 1935 first quarter than in the similar period last year; while New Mexico and Arkansas also had more completions. There were fewer completions, however, in Louisiana, the Southeastern States, the Eastern States. Michigan, and the Rocky Mountain States (exclusive of New Mexico).

The 2355 completions for Texas in the 1935 first quarter compared with 2036 last year, both figures including oil wells, gas wells, and dry holes. Completions increased in California to 201 from 95, in Oklahoma to 436 from 339, in Kansas to 254 from 175, in New Mexico to 70 from 17, and in Arkansas to 48 from 16. The completions declined in Louisiana to 157 from 172, in the Southeastern States to 5 from 9, in the Eastern States to 511 from 530, in Michigan to 71 from 103, and in the Rocky Mountain States, exclusive of New Mexico, to 23 from 33.

Yates Survey Suit Decision Affirmed

Austin, Texas.—The Third Court of Civil Appeals last week handed down a decision in the Whitesides suit, affirming the decision of the District Judge C. A. Wheeler in the suit Douglas Oil Company vs. State.

In this decision the court upheld the boundaries as defined by the Dod Survey. The court pointed out that the field had been developed by operators relying "upon the assumed integrity of the Dod resurvey. Under the offset theory a large number of wells have been drilled in relatively close proximity to the survey lines."

Should the original, or Turner Survey have been applied, the effect would be to "move all survey lines to the west, resulting in divesting the ownership of wells out of those who had drilled them." This, explained the court, would result in interminable litigation.

Crude Control and Separation Recommended by Code Investigators

(*Continued from page 11*)

if they are not enforceable, to revise them so as to make them operative.

Most of the complaints allege the use of profits from low cost flush production or pipe line profits to subsidize unprofitable refining and marketing operations.

"To facilitate enforcement of Rules 4 and 6 of Article V, a majority of this committee favor the enactment of legislation which would prohibit a single corporation from engaging in more than one branch of the industry, viz; production, pipe line transportation, refining and marketing," the report declared. "We do not recommend requiring divorcement of management and operation of the separate corporations; such divorcement, we believe, would be unnecessarily disruptive, especially expensive to small and medium size companies, and inadvisable from the standpoint of efficiency of operations of the industry. We believe that corporate separation alone, without interfering with the control and coordination of over-all operations, would assure 'arms length' transactions between the different corporations. We believe that such separation, together with the requirement that reports be filed at stated intervals concerning the financial results of operations of companies having joint management, would exert financial and publicity pressure toward abandonment or reform of the notoriously uneconomical and unprofitable marketing operations of many integrated companies."

As an immediate step toward determining costs for the purposes of ascertaining when sales are being made below cost in violation of Rule 4 and to assist in determining to what extent revenues from one branch of the industry are being used to offset losses in other branches, in violation of Rule 6, the report recommended "that all integrated and partially integrated companies of substantial size be required to submit to the oil administrator profit and loss statements covering their operations, separated into each of the four branches of the industry, together with sufficient data to evidence whether transactions between operations in different branches are on an 'arms lenth' basis with the proper distribution of overhead charges. We believe that such data can be obtained under Section 6 of Article VII, which provides for the collection of statistical and other reports which may be needed for the purpose of the code."

Specific recommendations covering the individual problems of the various branches of the industry are made by the committee.

"We find that independent and small units in the production branch of the industry have, on the whole, been greatly benefited by the code," it was stated. "The complaints that have been received pertain chiefly to the wage and hour provisions affecting employees on sub-marginal properties.

"To relieve small operators of stripper wells, so defined to include only sub-marginal properties, we recommend that operations on such properties be relieved from labor provisions of the code pertaining both to minimum wages and maximum hours.

"We find that the inability to attain an effective and assured control over crude oil supply has been the most important factor contributing to the weakness of refined product prices, which in turn has endangered, and continues to endanger, the maintenance of present crude oil prices.

"We believe, therefore, that it is of the greatest importance to small enterprises, not only in production but in other branches of the industry, that such control be achieved as will not only be effective in fact, but which will insure confidence by leaving the least possible doubt as to its continuing effectiveness. We favor such legislation as may be necessary to accomplish this important purpose.

"To meet the complaints of drilling contractors that their employees are unable to average a full 36-hours work per week without working more than 48 hours in some weeks, we recommend that the maximum number of hours that an employee may work during the drilling of any single well be increased to 56 hours per week.

"We find that rig building contractors have suffered severely because code wage provisions pertaining to their operations are more strict than are the provisions applying to similar work when done by the oil companies. We recommend that rig building operations be defined, that all labor engaged in such work be properly classified, and for the different classifications there be established minimum wages bearing a proper relationship to wages now prevailing in the oil industry."

In the refining branch of the industry, the committee found that small non-integrated refiners have been se-

verely injured by the code and are in an "intolerable position" because prices of crude oil and refined products are not on a parity.

The report pointed out two ways by which these refiners can be relieved; either by an increase in refined prices to a parity with posted crude prices, or by a reduction in crude prices to a parity with refined products. "The first alternative would relieve the refiners without injuring the producers and thus is preferable," it was commented.

Explaining that information had been received that a relief program for refiners is under consideration, which would stabilize both tank-car and retail gasoline prices at levels which would place them in proper relation with prevailing crude prices—and recommending that the oil administrator give it his support—the committee recommended, if this is not done, that crude prices be reduced, a drop of approximately 20 cents per barrel being held necessary at this time to make crude and gasoline prices conform at the ratio of 18.5 to 1, as provided in Section 6 of Article III of the code.

It also recommends that authority be given to refiners to enter into compacts, approved by the administrator, for voluntary restriction of gasoline production below their allocations and the transfer to smaller companies of some of their allowable production.

In the marketing field, the committee found that small jobbers have suffered because of increased labor costs with little or no corresponding increase in margins, but have profited from Rule 8 of Article V, which prohibits the loaning of equipment. Service station dealers have also suffered from increased labor costs, and in some instances from reductions in margins due to the elimination of secret rebates from their suppliers, and in many cases have suffered a loss in volume because of tank-truck competition.

The entire marketing branch of the industry has suffered "by price wars of unprecedented intensity and duration which may have been intensified by fear of regimentation under the code," it was said.

To meet the situation, it is recommended that smaller discounts be given for truck sales to large accounts, that the dominant marketers in each area file with a stabilization committee the formula by which they determine their normal price levels, and that, to discourage the further building of service stations, that marketers be permitted to enter into compacts to discontinue or restrict building in agreed-upon areas.

Discussing the code itself, the committee criticized the present code organization, "with its great number of local, state, regional and national committees and sub-committees," as unnecessarily cumbersome and expensive to the industry, and recommended simplification of the set-up and the giving to small and non-integrated enterprises more adequate representation.

In order that the smaller companies may have the same advance information concerning impending changes in code interpretations, rules and policies as is enjoyed by the larger companies that are represented on the principal committees, it is recommended that meetings of the Planning and Coordination committee and the principal committees under them be opened to the trade press.

Holding that small enterprises have suffered from failure to enforce certain provisions of the code which are apparently unenforceable, either because of doubtful legality or because of their nature, the committee recommended that when the code is re-drafted, such provisions either be dropped entirely or be segregated into a separate section, adherence to which would be by mutual agreement.

New Potential Basis Will Be Established at Kettleman Hills
(Continued from Page 16)

surface pressures, and which may be readily determined by periodic readings of subsurface pressures at various rates of production."

The order outlines the methods to be followed in determining the production formula.

The office of the Oil Umpire for the Central Committee of California Oil Producers is also directed by the administrator "to examine promptly the other fields in California where conditions conducive to waste and unfair production practices may be similar to those encountered in the Kettleman Hills North Dome field, and, upon the establishment of such conditions, shall at once report all such fields to the Petroleum Administrator, and the intra-field allocations of the quotas of such fields, subject to the approval of the Administrator, shall be made in accordance with the principles outlined above for the Kettleman Hills North Dome field."

Reconditioning 1000 Miles of Pipe Line in Texas

Dallas, Texas.—Magnolia Pipe Line Company has launched a major pipe line reconditioning project that may ultimately result in about 1000 miles of eight- and 10-inch carriers undergoing a complete renovation. Work has been underway for several weeks on its Luling-Beaumont trunk line, and on one of its four-way units comprising the Corsicana-Beaumont system. The program, as now outlined, calls for the reconditioning of the three eight-inch and single 10-inch lines now handling the bulk of the company's Mid-Continent district crude runs from Corsicana to Magnolia Petroleum Company's principal refinery and tanker terminal near Beaumont.

This reconditioning program promises to become the outstanding pipe line work in the southwest for the current year. Unofficial estimates indicate that the company is preparing to spend a large sum, as the type of renovation to be administered to the lines will likely vary from $1500 to $2000 per mile. Officials of the company advanced the starting date of the project in order that gainful employment may be given to idle labor to be engaged along the route of the two systems.

Mitchell-Stewart Construction Company, a Dallas concern, has been awarded the contract to condition the lines. A single crew has been put to work on each of the lines, while the schedule calls for the use of six full crews. Excavation of the pipe will be performed by manual labor, thereby enabling the contractor to hire a large amount of unskilled labor, which will be recruited from the nearest of the communities and towns traversed. The lines will remain in active operation throughout the reconditioning work, except when necessary to replace sections that may be found to be beyond repair.

Approximately 230 miles of single eight-inch line completed by Magnolia Pipe Line Company in 1924 from Luling to Beaumont is to receive its first general overhauling. One crew has started working eastward from Luling, and others are to be spotted at various points along the route. This carrier

serves a large number of fields, producing varied grades of crude, in southwest Texas, and has operated near its maximum capacity for a number of years. It was one of the first long welded crude lines in Texas.

Initial work on the Corsicana-Beaumont system, involving about 240 miles of pipe in each unit, has been started on the discharge side of Brown station, Leon County. Selection of this starting point was made because of its accessibility to highway travel, and immunity from flood waters that frequently arise during the spring months along the route. Other crews will be spotted at intervals. First work is being done on line No. 3, an eight-inch screw unit, originally consisting of loops thrown in at intervals. Some of the loops have been in service since 1915.

Reconditioning work will be restricted to this single line until finished, then the program calls for the crews to move on an adjacent unit and continue until all four carriers have been renovated, provided the physical condition of the first line or two shows justification for the expenditure. The Corsicana-Beaumont system occupies parallel trenches, ranging from 15 to 30 feet in width. Based on past experience the company has found it impractical to simultaneously recondition parallel lines for any appreciable distance.

One of the first crude lines built from North Texas to the Texas Coast is included in Magnolia Pipe Line Company's Corsicana - Beaumont system. It extends from Electra via Corsicana to the port city, and was completed in 1911, having performed continuous duty throughout this 24-year period. It is also slated for another general overhauling along with the other eight-inch carrier. The single 10-inch unit was completed in 1927.

Upon removal of the pipe from the trench, machines will be employed to clean the surface of old coating, rust and scale. Experienced inspectors will designate the pits to be patched by welders, or the sections of pipe to be cut out and replaced with new joints. The pipe line superintendent in each district will be detailed by Magnolia Pipe Line Company to maintain close supervision over the work.

Protection coating to be administered to the conditioned line will consist of rust preventive pipe insulation compound, followed by a tight wrapping with chemically treated muslin. The wrapped pipe will then be given a final coating of water-proof paint before being returned to its original position in the ditch.

Thomas Bill Seen by Franklin As Answer to Code Critics

Washington, D. C. — Enactment of the Thomas bill is seen by Wirt Franklin, president of the Independent Petroleum Association of America, as the only answer to the criticisms and recommendations made by the committee surveying the effect of the oil code on small enterprises.

"The cut in price of crude petroleum in order to save the independent refiners and almost every other proposal in this report down to its discussion of separation of the industry into its four component parts is a challenge to the oil men of the country to get together on some constructive program unless they wish to invite these or even more drastic and possibly ruin our conditions in the immediate future," Franklin declared March 29.

"The independent producer needs the independent refiner," he asserted. "The elimination of one might mean the elimination of the other. The independent producer can see the necessity of some immediate steps being taken to relieve the independent refiner but it is hard to make him understand why he should sell his product at a cut rate or below production costs when there is a more logical and practical method of removing the causes of the refiner's difficulties.

"The recommendations made by the committee all point to this. Both the independent producer and the independent refiner will agree with the committee when it says it 'has become convinced that no permanent benefits of material value to either small or large enterprises of the petroleum industry can be obtained under the code without a permanent, assured and effective balance of crude oil supply and demand, nor can stability of the industry and conservation of the oil resources of the nation be achieved without such balance'. And also its contention that 'failure to restrict imports to amounts allowed has resulted in these excess imports supplying markets which would otherwise have been available to domestic producers. It is pointed out that as a result of hot oil and other over-supplies pressing on the market, combined with the uncertainty of effective control of supplies and the selling of crude oil below the posted market price, in the form of gasoline and other refined products, by integrated companies in their mad scramble for gallonage, that the prices of refined products have been depressed constantly to levels below those necessary to the support of existing posted crude oil prices, thus endangering the maintenance of the crude oil prices which are essential if proper conservation is to be achieved'.

"Neither the industry as a whole nor the producers in the industry should have to face the damage which would be done should there be the suggested price cut, even though it might be true, as the committee report states, that by such a cut 'the entire industry we believe would be aroused out of its complacency over the plight of those companies that cannot hold out much longer'," he asserted. "The history of the industry will probably justify the expressed opinion of some of the committee that 'a drop in crude oil prices would simply result in a further decline in the prices of refined products unless the fundamental factors necessary to prevent such a result were made effective in the meantime'.

"There is only one proposal now before the industry which would adequately meet this situation. That is the Thomas bill now before the Senate mines and mining committee, which offers to the industry and to the oil states the aid of the Federal Government in establishing, under permanent legislation, a proper balance of crude oil supply and demand in which alone producers, refiners and marketers can find that stability and that certainty which is impossible either under short-term legislation or under the administration of state laws which cannot give full and necessary consideration to a national problem."

Pawhuska, Okla. — Disappointment was expressed at results of the Osage Tribal oil and gas lease sale held here on Wednesday, March 27, when 62 of the 80 tracts put up for bid were sold for a total bonus of $637,400 or an average of $65.61 per acre. The sale seemed headed for absolute failure until tracts in the old Burbank pool were offered. F. B. Howland, general manager for Enterprise Transit Company of Titusville, Pa., paid the top bid of the day when he paid $301,000 for the NE 34-26n-6e. Howland obtained the NE 35-26n-6e for $9400 but a short time later had to go to $223,000 to get the NW 35-26n-6e. All three leases are close to the SE 34-26n-6e, which Howland paid $325,000 for in September, 1934.

New Oklahoma City Zone Adds Four Operations

Oklahoma City.—The new drilling zone of the Oklahoma City pool, recently extended by city referendum approximately two miles to the north of the old zone, received four new operations during the week.

Phillips Petroleum Company announced location for No. 1, SE SW SW NE Section 34-12n-3w, and was digging cellar for No. 1, SE SE SW NE Section 34-12n-3w. Westgate Oil Company et al's Carey 8, NW NW NE SE Section 34-12n-3w, and Carey 9, NW NE NE SE, same section, were locations.

Nicoma Park Extension Well Apparently Small

Oklahoma City.—Marathon Oil Company's Ball 2, NW SW NE, Section 19-12n-1w, semi-wildcat in the Nicoma Park area, seven miles east of here in eastern Oklahoma County, was shot with 10 quarts from 6129 to 6137 feet and responded by swabbing 42 barrels of oil in 24 hours with a slight increase in gas. On the following day it swabbed only 17 barrels. It probably will be deepened.

Chicken farm sand was logged from 6128 to 6137 feet, the total depth.

Nicoma Park pool is a one-well pool discovered several years ago. Two dry holes have been completed in the area since completion of the discovery well.

New Pool Opened In Seminole County

Little, Okla.—Carter Oil Company opened a new pool three-quarters of a mile east of here in northern Seminole County when Black 1, C NE SE 14-10n-6e, started flowing at the rate of 1150 barrels from Misener sand at 4127 to 4146 feet. Operators were running tubing to complete. Nearest production is in the Keokuk pool a short distance to the north. The new well has not been acidized. Magnolia Petroleum Company has made a tentative location at No. 1, SE SE NW 14-10n-6e, one half mile to the west and slightly north.

Stanolind May Drill Pittsburg County Test

Tulsa, Okla.—Stanolind Oil & Gas Company is reported to be interested in a 10,000-acre block on the Salt Prairie structure in 3n-11 and 12e, southwestern Pittsburg County, Oklahoma. According to the reports Stanolind is checking titles and probably will re-survey the area with seismograph at an early date. In event the deal is consummated it is understood that the Indiana subsidiary will take half interest in the block and will drill a deep test. Ramsey Petroleum Corporation assembled the block. Stanolind is also reported to be considering the purchase of a half of Ramsey Petroleum Corporation's interest in the Centrahoma block in 2n-8 and 9e, southwestern Coal County. Carter Oil Company purchased a half interest in the block from Ramsey several months ago and agreed to drill two deep tests. One of these is due to get under way within the next few weeks.

New Binger Test Is Ready to Spud

Binger, Okla.—Denver Producing & Refining Company was reported unloading electric drilling equipment early in the week at its Sah-Cam 1, C SE SE 33-10n-10w, a 40-acre west offset to the now famous "Binger" well which is rated as the deepest producing well in the world. Drilling should start on the new test within the next few days since all other equipment has already been set up awaiting arrival of the electric equipment from the factory.

Southwest Logan County Wildcat Looking Good

Navina, Okla.—Sinclair Prairie Oil Company and Slick-Urschel Oil Company's Koatsch 1, SW SW SW Section 23-15n-3w, 4½ miles southeast of here in southwestern Logan County, topped Viola lime at 6085 feet, Simpson dense at 6115 feet and cored from 6168 to 6182 feet, recovering five feet of dolomite with a small showing of oil and gas. The hole will be reamed down and cored ahead. This test is located in a portion of the county that has been exceedingly popular and has had several deep tests with no success. It is reported running high.

Civilized Tribe Lease Sale Includes 15,000 Acres

Muskogee, Okla.—The Five Civilized Tribes, through A. M. Landman, superintendent of the agency here, will offer for bid Thursday, April 11, oil and gas leases on 165 tracts of restricted Indian lands comprising 15,668.37 acres in 21 Oklahoma counties. Haskell County leads the list of large offerings with 3051.04 acres in 28 tracts; Marshall County will be second with 2197-.73 acres in 33 tracts; and Jefferson County, third with 1402.60 acres in 15 tracts. Leases in Pontotoc, Coal, Atoka and Pittsburg are expected to receive considerable attention in view of the development and plays now under way.

Fitts Wildcat Is 300 Feet in Bromide

Jesse, Okla.—Paramount Petroleum Company's Graham 1, SW SE SW 13-1n-7e, two miles south of here and 5½ miles southeast of the Fitts pool, encountered a dry sand at 3406 feet and was drilling below 3415 feet with the hole caving badly. This wildcat test created considerable excitement several weeks ago when it found Hunton lime several hundred feet higher than it had been found in the Fitts pool. However, the Hunton yielded only an odor of oil and gas and drilling was continued. Bromide was topped at 3115 feet, the first sand at 3230 feet and the second sand at 3291 feet. Both were dry and at 3302 feet operators had a hole full of water. The sand in which operators are now drilling probably is one of those of the McLish zone. Sunray Oil Company et al's Curtis 1, SW SW NW 13-1n-7e, approximately 1½ miles north of the Graham test, cored hard black shale from 2803 to 2820 feet and was drilling below 2860 feet.

Bay Test Expecting To Hit Skinner Sand

Newkirk, Okla.—Bay Oil Corporation's Curtis 1, NE NE NW Section 23-28n-3e, southwest diagonal offset in the new Bay pool five miles east of here, topped Layton sand at 2296 feet, found water at 2326 feet and went out of Layton at 2360 feet. It was drilling below 2660 feet and expecting to find Skinner sand within a few days.

Garfield Wildcat in Mississippi Lime

Billings, Okla.—Herndon Drilling Company et al's Allen 1, NE NE SW Section 35-24n-3w, wildcat test 2½ miles southwest of here in northeastern Garfield County, topped Mississippi lime at 4705 feet and was drilling below with nothing showing. This test is on the Namaha Ridge trend between the Garber and Retta pools and is one mile east of a lone producer completed several years ago by Shell Petroleum Corporation.

Reno County

Olcott, Kansas.—Privett Drilling Company's Crotts 1, NE NW NE 27-26s-10w, wildcat test 1½ miles west of here in southwestern Reno County, encountered top of Mississippi chat at 3981 feet, had a small showing of oil from 3982 to 3993 feet and a show of free oil from 4037 to 4044 feet where a small amount of water was found. It was drilling below 4220 feet after going out of Mississippi lime at 4050 feet.

Fitts Pool Depends On Future Delevopments

Ada, Okla.—The Fitts pool of southeastern Pontotoc County has reached a stage where its future development will depend largely on the outcome of several tests now drilling. A major fault, which strikes roughly east and west, can be traced at the surface and subsurface studies indicate this to be a zone of several faults. Wells now drilling to the south of the surface expression of the fault expect to cut the plane and go back into the upthrown side finding the formations at levels encountered in wells to the north. In event that this turns out to be successful the field may spread several locations to the south. Otherwise its future lies to the east. E. H. Moore et al's Mitchell 1, NW SW NW 31-2n-7e, several locations south of the surface intersection of the fault is reported finding a complicated geologic section which does not correlate easily with wells to the north. This test encountered Cromwell sand at 3470 feet, had a twist-off at 3996 feet and was fishing.

Phillips Petroleum Company's Norris 3, NE NE SW 25-2n-6e, in the southwestern portion of the pool, had top of Viola lime at 3827 feet and was drilling below 3850 feet. Norris 4, SE SE SW 25-2n-6e, topped Bromide at 4205 feet, had the first sand at 4285 feet, the second sand at 4385 feet and drilled to 4415 feet where it was being tubed to wash in. Stanolind Oil & Gas Company et al's Norris 5, NW SW SE 25-2n-6e, topped Viola limestone at 3806 feet, drilled to 3830 feet, set seven-inch casing at 3807 feet and was waiting on cement to set.

A rather interesting situation has developed in the southwestern portion of the pool where four wells have started making water. All four apparently were drilled to the proper depth and were cased as successfully as conditions in the pool permit. Cross-sections drawn through the offending wells indicate that they are high enough to be above the oil-water contact and yield no information as to the possible source of the water. Chemical analysis indicates the source to be of Ordovician origin. If this be true the question of unsuccessful or improper casing can be eliminated. One of the first plausable answers is that water from below the Bromide or principal producing zone is entering the wells along numerous fault planes which are known to exist.

Oklahoma Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ATOKA COUNTY—		
Atoka Pet. Co., Rowland 1, nw ne ne 18-3s-10w (pb 750)	*	3844
CREEK COUNTY—		
Kendall & Wise, Tahladege 4, ne nw nw nw 10-18n-11e	5	1899
C. G. Tibbins, Wilson 3, sw sw sw ne 18-14n-9e	70	1224
Bay State Oil Co. et al, Tiger 6, csl sw sw 3-17n-8e	40	1412
Doke & Hughes, Jones 7, cnl nw nw 10-17n-8e	30	1425
F. O. Akin Oil Co., King 4, ne ne se sw 35-18n-8e	60	1582
P. Adamson, Jr., Kerr 1, se se se sw 10-18n-10e	*	2356
Hobert Drilling Co., Hennaha 1, s½ nw nw se 12-19n-9e	*	2273
JACKSON COUNTY—		
Gypsy Oil Co., Edwards 1, se se se 3-1n-20w	25	1667
KAY COUNTY—		
Phillips Pet. Co., Rhodes 6, nw sw se 9-27n-5e (otd 3041)	15	3085
LOGAN COUNTY—		
Shell Pet. Corp. et al, Hirzel 1, se sw sw 7-16n-2w	*	6031
MARSHALL COUNTY—		
Newsome, Fee 5, se nw se 36-7s-5e (pb 485)	¶2½	882
MUSKOGEE COUNTY—		
Gilmore et al, Vanderslice 1-B, sw sw ne nw 32-15n-15e	10	1264
Arthur Oil Co., Townsite 2, se se nw ne 34-15n-18e	4	1118
OKFUSKEE COUNTY—		
Stekoll et al, Pincham 7, sw ne ne se 2-10n-11e (pb 1670)	5	1830
Prince & Anderson, Likowski 1-A, ne se nw sw 23-11n-11e	5	1660
Mid-Continent Pet. Corp., Haney 1, sw se ne 24-12n-8e. (pb 3962)	¶15½	4166
OKLAHOMA COUNTY—		
Helmerich-Payne, Katy Station 1, ne ne nw ne 3-11n-3w	*	6501
Travis Pet. Co., Lucas 1, ne ne nw sw 36-12n-3w	155	6617
OKMULGEE COUNTY—		
Colton, Berry hill 1-A, se se sw nw 10-12n-12e (otd 2356 pb 2356)	40	3250
Selby Oil Co., Bonner 4-A, ne sw ne nw 6-14n-15e	*	1536
OSAGE COUNTY—		
Texas Co., J. W. Stroud 11, se sw nw 30-25n-8e	80	2394
C. R. Grey 1, se ne ne nw 27-21n-9e	*	1076
Barnsdall, 16, ne ne ne nw 30-21n-9e	*	420
Johnson O&R Co., 10, w½ sw nw se 30-21n-9e	40	315
W. C. Norris 2, sw se sw ne 29-21n-11e	¶1½-70	1980
Champlin Ref. Co. 7, sw se nw 16-24n-7e	150	2647
Continental & Gypsy, Farrell 9, se sw ne 21-24n-7e	432	2714
Lewis Prod., Mullendore "B" 6, sw se nw 21-24n-7e	566	2688
Mullendore "A" 3, nw ne sw 21-24n-7e	779	2668
Continental, Lessertt 4, ne ne nw se 21-24n-7e.	269	2703
Lewis Prod. Co. 2, sw se sw 28-24n-7e	452	2636
Midco Pet. Corp., Adlum 6, sw sw nw 10-25n-6e	2400	2770
Kasishke, Inc., 5, e½ ne nw nw 21-25n-6e	60	2755
PONTOTOC COUNTY—		
Magnolia, Shaffer 1, se se nw 25-2n-6e	13,248	4335
Phillips, T. Norris 2, se ne sw 25-2n-6e	21,048	4299
Moore et al, Akers 2, se nw ne 36-2n-6e	16,680	4432
Showers 1-A, s½ nw sw nw 29-2n-7e	18,312	4287
Carter, Harden 4, sw ne sw 30-2n-7e	15,168	4125
Richards 7, sw ne se 30-2n-7e	13,392	4188
Richards 8, ne ne se 30-2n-7e	15,624	4229
Southern Oil Corp., Vierson 1, ne ne se 17-3n-7e	lcn.	abd.
POTTAWATOMIE COUNTY—		
Elbar Oil Co., Wyatt 2, sw nw nw 10-7n-4e (otd 3755)	40	3803
Magnolia, A. Crane 1, sw se nw 12-7n-4e	421	3975
SEMINOLE COUNTY—		
Mid-Continent Pet. Corp., Gassoway 1, se se ne 14-6n-5e	300	3848
Pierce et al, Spillman 1, csw sw 7-6n-8e	228	2894

*Failures; †Junked; ¶Mil. cu. ft. gas.

Big Wells Account for Oklahoma Initial Output

Tulsa.—Of the 35 new oil wells which added 120,223 barrels to Oklahoma initial production during the week, the Fitts pool of southeastern Pontotoc County accounted for 113,472 barrels from seven wells. The Naval Reserve pool with six new wells had a total initial of 2648 barrels and the South Burbank pool with two wells had 2460 barrels, leaving only 1643 barrels to the remaining 20 wells. Included in the completion report were two dry gas wells with combined initial volume of 18,000,000 cubic feet, one abandoned location, and eight dry holes, a total of 46 completions which involved 118,651 feet of drilling. Included in this figure were two old wells drilled 938 feet deeper and three wildcats, one a gas well drilled to 4166 feet, one a dry hole at 6031 feet and the other an abandoned location. Wildcat drilling involved 10,197 feet.

One Well Completed And One Due at Edmond

Edmond, Okla.—The Edmond pool, four miles west of here in northwestern Oklahoma County, came back into prominence during the week when Marathon Oil Company's Dahl 3, NW NW SE Section 31-14n-3w, came in flowing at the rate of approximately 293 barrels of oil per hour and making gas at the rate of 12½ million cubic

feet. Wilcox sand was encountered at 6620 feet and solid saturated sand drilled to 6695 feet, the total depth.

Flow the first 45 minutes was 224 barrels. During the next eight hours it made respectively, 305, 300, 317, 315, 269, 295, 290, and 310 barrels. On the last 30-minute gauge it did 165 barrels, a total of 2790 barrels in 9½ hours.

Mid-Continent Petroleum Corporation's Young 2, SW SW NE Section 31-14n-3w, north offset to Dahl 3, topped Wilcox sand at 6578 feet and was drilling below 6650 feet.

Burrton Test Finds Water in Siliceous Lime

Hutchinson, Kansas.—Olson Oil Company's Downie 5, SE SE NW 14-23s-4w, in the northern portion of the Burrton-Haury pool northeast of here in northeastern Reno County, drilled Siliceous lime from 3822 to 3837 feet, had a hole full of water and plugged back to 3370 feet. Casing was ripped from 3350 to 3370 feet with a resulting flow of 5,600,000 cubic feet of gas. A showing of oil and water had been encountered in Mississippi chat at 3262 feet. This is the second test to go to Siliceous lime in the northern portion of the pool.

Barnsdall Oil Company encountered what appeared to be commercial production higher on structure in the lime several months ago but plugged back to Hunton lime, the principal producing zone in the field. Siliceous lime probably will receive considerable attention in the area when Hunton lime nears depletion.

Slightly over a half mile to the east of production in the pool proper, Estes et al No. 1, NW NW NE 30-23s-3w, encountered the chat at 3268 feet and had an estimated 5,000,000 cubic feet of gas with showings of oil at 3310, 3325 and 3328 feet. It was drilling below 3340 with no increases reported.

New Field Opened In Harvey County

Hesston, Kansas.—L. W. Prunty et al's Davis 1, NE NE NE 6-22s-1w, one mile northwest of the new Hesston pool in northern Harvey County, found Wilcox sand at 3457 feet, a hole full of water from 3530 to 3533 feet and plugged back to 3320 feet where it was treated with 1000 gallons of acid. A second treatment of 1000 gallons resulted in a pumping gauge of 100 barrels of oil and five barrels of water in 24 hours. It apparently is a new pol.

Deep Oxford Pool Test Is Showing

Oxford, Kansas.—Lario Oil & Gas Company and Barnsdall Oil Company made what may be an important find in the old Oxford Pool one mile south of here in eastern Sumner County. Their Wenrich 4, NE NW NW 23-32s-2e, was originally completed on March 28, 1928, yielding 1520 barrels from Stalnacker sand at 1987 to 2110 feet. Deepening operations were recently commenced and the well went out of Stalnacker sand at 2160 feet and into Kansas City lime at 2400 feet. First oil was found at 2405 feet and the hole drilled to 2453 feet where it filled 600 feet and had a small showing of water in 12 hours. It will be plugged back about two feet and treated with acid. This is the first well in the Oxford Pool proper to be drilled below the Stalnacker sand.

Barber County Activity Increasing

Medicine Lodge, Kansas—Lario Oil & Gas Company et al have staked location for Whelan 2, C SW NW 32-31s-11w, approximately one half mile to the southeast of their discovery well which was completed as the first oil producer in Barber County several months ago. The discovery well, five miles northeast of here in the northwestern portion of the county, has a potential of 231 barrels per day from Mississippi chat.

Barbara Oil & Gas Company is moving in rotary tools for Lytle 3, C SE NE 12-33s-13w, one half mile east of gas production in the old Medicine Lodge pool. It apparently will test the oil possibilities of the area.

Kansas Work Shows Increase

Wichita, Kansas.—With relief from the palling dust storms which had swept the state for several weeks Kansas operators were getting under way again as indicated by an increase of almost 50 percent in new work. The various new pools of Russell County have attracted a number of operators to the area and the county led in new work with 11 first reports. Rice County crowded Reno County into third place with nine first reports in the former and eight in the latter. The remainder of the new work was scattered and no specific area stood out predominantly. Greenwood County had three starts, Butler, Cowley, Ellsworth and Woodson counties, two each; and Barton, Harvey, Marion, Scott, Sedgwick and Sumner Counties, one each; a total of 47 as compared to 26 the preceding week.

The Burrton-Haury pool of northeastern Reno County continued to hold an outstanding lead in number of wells completed and size of initial production. During the week the pool reported eight completed oil wells with combined initial volume of 10,686 barrels while scouts reported 13 wells with combined initial of 8071 barrels from the remainder of the state, a total of 21 oil wells and 18,755 barrels initial. One abandoned location, one abandoned rig and five dry holes brought the total number of completions to 28 which involved 83,423 feet of drilling including five feet in one old well and 3420 feet in one wildcat dry hole.

Kansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BUTLER COUNTY—		
Magnolia, Anderson 9, se sw nw nw 15-27s-4e	*	2975
CHASE COUNTY—		
Selby Oil Co., Leedy 2, ne nw sw 25-22s-9e	50	2495
COWLEY COUNTY—		
Trees Oil Co., Titworth 1, cnw ne 30-30s-4e	35	2864
ELLSWORTH COUNTY—		
Stanolind & Gypsy, Frevert 3, ce½ e½ ne 21-16s-10w	797	3337
Twin Dril. Co. et al, Rolfs 2, nw nw sw 13-17s-9w	1300	3203
Bradley & Scanlon, Mahoney 1, ne se se 14-17s-9w	1462	3200
Smith & Ash, Stratman 2, sw ne ne 12-17s-10w	*	3375
GREENWOOD COUNTY—		
Wenzel et al, Cross 1, ne se ne 12-27s-10e	lcn	abd
McPHERSON COUNTY—		
Lario O&G Co., Hill 4, nw ne se 23-19s-2w	20	3442
RENO COUNTY—		
Manning & Terry, Bartel 1, ne se se sw 36-22s-4w	*	3646
Barnsdall, Sabin "B" 8, se ne ne 11-23s-4w	1878	3610
Sabin "C" 9, se nw se 11-23s-4w	1355	3594
Sabin "C" 13, nw se se 11-23s-4w	rig	abd
Wilcox O&G Co., Neufeldt 2, nw sw nw 12-23s-4w	1433	3621
Olson & Shell, Downie 7 nw ne ne 14-23s-4w	1457	3594
Downie 8, ne ne ne 14-23s-4w	29	3620
Blake 6, nw ne se 23-23s-4w	3371	3615
Duckworth 3, nw nw ne 23-23s-4w	1113	3606
Olson Oil Co., Adkins 3, cne sw 35-23s-4w	¶11½-50	3371
RICE COUNTY—		
Empire Oil & Ref. Co., Grove 2, ne sw ne 29-19s-9w	1724	3215
Langston et al, Markle 1, ne sw 1-20s-9w	*	3420
RUSSELL COUNTY—		
Carey et al, Reed 1, nw nw sw 34-13s-14w	203	3311
Central Pet. Co., Dortland "B" 1-D, sw se nw 4-14s-15w	621	3065
Phillips, Holland 2, nw sw sw 13-14s-15w	573	3235
SEDGWICK COUNTY—		
Shawver, Brookings 4, se sw sw 16-28s-1e	213	3116
Dikey Oil Co., Brown 3, sw sw sw ne 20-28s-1e	882	3121
Cook 1, ne ne nw 20-28s-1e (otd 3116)	191	3121
D. R. Lauck, Jordan 2, se sw se 6-28s-1w	*	3767

*Failures; †Junked; ¶Mil. cu. ft. gas.

Spread of Salt Water in East Texas Is Progressing

Tyler, Texas.—Technicians who have adhered to the theory that the East Texas field eventually would come into a liberal share of the salt water handicaps that have been borne by all older East Texas fields that produce from the Woodbine sand under varied structural conditions, are beginning to win over the opposition to such views. Noticeable expansion of the water table to heretofore untouched portions of the giant structure followed in the wake of the reservoir pressure drops in January and February, leaving no doubt in the minds of the operators about pending water problems. Disregarding the history of other Woodbine areas, technicians representing several schools of thought have in the past refused to concede that the field would be burdened with a rapidly rising water table.

Private canvass of well owners reveals that numerous wells not appearing on available itemized lists of producers showing cut oil are yielding small quantities of water in making their nominal production allowable of about 27 barrels daily. A late survey of the situation by the East Texas Anti-Pollution Committee lists less than 1000 wells as sources of water.

Presence of bottom hole water in wells that are produced in accordance with the Texas Railroad Commission's regulations each day and retarded over a period of hours will not make its appearance at the surface, due to the small daily allowable. Such has been found particularly true on west flank leases that have wells incapable of kicking off through the tubing, and when produced from the casing yield the allocated crude quota without disturbing the column of water standing in the hole. Harry Miles, chief proration enforcement officer, is waging a drive against well owners that are employing short strings of tubing to avoid handling water in lifting the oil by pumping, or with the aid of air or gas flowing devices, as the rules require that plug back operations be undertaken on water wells.

Deep inroads made by the advancing water table upon the densely drilled and drained Gladewater section of the field is rapidly reducing the wells in the area to the pumping stage. Physical condition of this section of the field has reached a stage that operators can not avoid handling water. Geo. L. Culver, who has been operating three refineries in the Gladewater sector, has undertaken the first commercial salt water disposal project. He has acquired surface rights on a tract situated south of the Sabine River and west of the Gladewater-Tyler highway to serve as the site for an earthen reservoir slated to accommodate about 2,000,000 barrels of salt water. Plans call for the construction of a 14-inch tile conduit that will afford a gravity flow of water from a gathering system in the Gladewater area.

Sinclair Shut Down

Speculation has been rife among East Texas operators as to the basis for Sinclair Prairie Oil Company suspending its major development program that was progressing at top speed when the shutdown order went into effect March 21. Work was halted on more than a score of tests that had reached the rig or derrick stage, and more than 100 additional approved permits to drill. This company by reason of owning a large amount of west edge properties has the greatest number of wells reported showing water. The recent change in the water situation is discounted as the basis for the sudden termination of the active drilling program, as most of the pending locations to be drilled are situated in the central and east portions of the structure, where water is not likely to become a problem for some years hence. Other reasons advanced for the cessation of all new drilling include the report that the company was awaiting the salvage of idle pipe lines held by Sinclair Prairie Pipe Line Company in Oklahoma and Kansas, and that the smaller sizes would be utilized in casing future East Texas wells.

Four Rigs Operating In Camp Hill Field

Palestine, Texas.—For rigs are in operation on Gulf Production Company's wildcat block in the Camp Hill area, southern Anderson County. The company's Davey and Royall 1, which opened there as a gasser and later converted itself into an oil producer is flowing about 150 barrels of oil, plus a small percentage of B. S. & W. each day in supplying fuel for some of the active rigs. Undaunted by the repeated appearance of salt water in the Woodbine sand horizon, the company has deepened Mary J. Ross 1, Robert Erwin Survey, situated about one mile to the south of the producer. L. B. Ross 1, J. C. Rosson Survey, logged Pecan chalk marker at about same structural position as the producer, and late last week had proceeded below the 4450-foot level. Operations on Maddox 1, D. Stiles Survey, and Robinson 1 were at shallow depths.

The Slocum area, situated about four miles southeast of the Camp Hill structure, is to be given a third test. H. L. Hunt, Tyler, et al have contracted to commence drilling by May 1 on the Mrs. Alice Scott 300-acre tract, Jas. Crawford Survey, to comply with lease assignment terms set forth by Pure Oil Company and others. Location will be on a line between the two Woodbine horizon failures drilled last year by Byrd-Frost, Inc., and Stanolind Oil & Gas Company, and on the same tract that the latter drilled their first wildcat, resulting in a small amount of free oil with salt water in Woodbine at 5455-5501 feet. The second failure was about one mile to the southeast, and on the J. T. Burrow 80-acre tract, M. Vascue Survey, yielding salt water in Woodbine section at 5366-5631 feet, although 97 feet higher on structure.

J. B. Daniel Oil & Royalty Company, Fairfield is moving in materials to drill a second test on the Red Lake structure, Freestone County, where the company completed a gasser last June in Woodbine at 4844-4854 feet after plugging off bottom hole water at 5003 feet. The new test is located 660 feet from the northwest and 990 feet from the northeast lines of 300-acre part of the P. D. C. Ball 5000-acre lease, J. Y. Aguilera Survey, about 3½ miles southeast of Turlington.

Production test for Joe A. Worsham et al's W. F. Wathen 1, which was listed last week as a probable 9600-foot north extension for the Cayuga field after showing oil on drill stem test at 4091 feet, or 3767 feet below sea level, was scheduled for the weekend. Seven-inch pipe was cemented at 4060 feet. A number of new tests will be started on acreage lying between the field and this outpost in the event a commercial producer is completed.

Supported by a block of leases, aggregating 4000 acres, a wildcat is slated to be drilled by R. W. Fair, Tyler, and associates in northern Smith County and about eight miles west of Winona. The location is to be on the Fred Terrell 72-acre tract, Eli Delk Survey. Contract calls for a test of the Woodbine sand horizon. Materials have been moved in by Sun Oil Company to proceed with the drilling of its previously announced wildcat project for eastern Smith County and about four miles northeast of Chapel Hill. Location is in the northwest corner of the Longley & Reeves 151.45-acre tract, Jonathan Lindley Survey. H. L. Hunt, Bryd-Frost, Inc., and Humble Oil & Refining Company, owners of leases in the area, pooled their acreage with Sun

Oil Company in making the test, while two other majors turned down an invitation to join the unit.

The salt dome area near LaRue, Henderson County, is promised several additional tests, including one by a partnership of major companies. The latter are starting a wildcat in an adjoining county, and will drill their LaRue block afterwards. J. K. Wells and others are reported to be planning to start operations shortly on a 3000-acre block situated about six miles southwest of LaRue and centering on the Thos. Hanna and Phillip Jackson Surveys. Work on the block has been underway for four months.

Prolific yield of salt water developed by Wm. C. McGlothlin et al's M. A. Dobbins 1, northwest part of the E. Lowry Survey, A-476, about two miles north of Corsicana, Navarro County, when formation tester was used in Woodbine sand at 2102 feet, or 1659 feet sub sea, virtually eliminated this wildcat.

East Texas Work Remains at High Level

Tyler, Texas.—Averaging 14 completions daily the past week, the East Texas field maintained its high rate of completions in recording 94 oil wells, one gasser, one junked test and two dry holes. The effect of the complete shutdown order against starting new tests received on March 21 by Sinclair Prairie Oil Company, most active unit in the field, will not be reflected in the field's completion report until the fore part of April. The company is proceeding with the drilling of all tests that had spudded, having 23 remaining on its active list late last week. The cessation work order involved a score or more tests with rigs or derricks in place, and more than 100 authorized permits to drill procured recently.

Two of the six non-flowing oil wells listed as completions the past week were drilled by Sinclair Prairie Oil Company on its west edge acreage in Smith County. The company's E. E. Moore 7, situated on 97-acre lease, Juan Vargas Survey, took in about one foot of sand in drilling to 3729 feet, or 3315 sub sea, and swabbed 58 barrels of oil in eight hours, while J. B. "Bunch" Wilson 9, also an edge location, swabbed 121 barrels of oil in seven hours from sand at 3751-64 feet, with the hole bottomed at a sub sea depth of 3324 feet. The remaining non-flowing wells were situated on the east flank of the structure in Rusk County.

East Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
JOINER AREA—		
Agey Drl Co, Mitchell Lee 1-A (7½-ac)	9600	3628
American-Liberty Oil Co. A. O. Spence-P. P. Co. 2 (67-ac)	¶5	3680
Atlantic, L. J. Pinkston 11-A (86.86-ac)	9000	3698
E. L. Pinkston 8-C (84.29-ac)	7500	3658
9-C (84.29-ac)	4500	3641
Big Indian Synd (T. B. Reese, Rec), Wolford 10 (40-ac)	6800	3741
Droppleman Drl Co, F. J. Cox 7 (24-ac)	9000	3713
Ralph E. Fair et al, B. F. Maxwell 13 (87.41-ac)	3600	3763
M. E. Florence et al, W. B. Perry 1 (8-ac)	7200	3627
Ford-Sample & J. W. Smith, A. J. Deason 3 (8.28-ac)	1500	3712
Great States Oil Corp, Mary Smith 4	480	3632
Gulf, A. H. Rayford 9-A (39.85-ac)	8400	3712
W. B. Hamilton Pet Co, L. A. Gambrell 12 (54.07-ac)	8500	3663
HB&W Oil Co, Minnie Elliott 1 (63.66-ac)	500	3661
Ras Redwine 12 (53-ac)	500	3570
Humble, J. E. Arnold 5 (43½-ac)	6500	3725
P. R. DeGuerin 16 (134.3-ac)	9000	3721
H. A. Piercy 14 (138.34-ac)	8000	3729
R. E. L. Silvey 6-C (58.02-ac)	9600	3769
Hunt Prod. Co, R. W. Fair 15-B (138½-ac)	9800	3704
Illinois Oil Co, Mayfield 19 (197.1-ac	6000	3778
Mayfield 26-A (197.1-ac)	7500	3806
R. F. Lane et al, D. E. Tyiska 2 (50-ac)	6500	3839
Marathon Oil Co, H. C. Burton 6 (61½-ac)	8500	3692
H. C. & G. W. Burton 24 (254.44-ac)	7400	3701
M. C. DeGuerin 15 (160.7-ac)	7200	3701
E. E. Moores 26 (201.4-ac)	5000	3695
L. O. McMillan & I. L. Thrash, I. R. Thrash 3 (2.29-ac)	7000	3775
M. H. McMurrey et al, G. A. Turner 11 (83-ac)	5000	3803
Sinclair Prairie, Mayfield 30-A (374-ac)	9600	3801
E. E. Moore 7 (97-ac)	250	3729
J. B. "Bunch" Wilson 9 (65-ac)	750	3764
F. B. Wilson 16 (124-ac)	10,500	3657
19 (124-ac)	10,000	3642
J. B. Wilson 10 (69-ac)	11,000	3638
Sun Oil Co, J. J. Denton 5-B (37.96-ac)	7000	3745
J. A. Layne 11 (103.7-ac)	7200	3645
KILGORE AREA—		
Agey Drl Co, F. Ferguson 1 (33½-ac)	80	3654
Barnsdall, B. D. Smith 8-B (39.97-ac)	7500	3574
Etex Oil Co, L. B. Morse 4 (10-ac)	8000	3602
Gulf, H. C. Alexander 27 (209.01-ac)	7200	3560
M. T. Cole 18 (161.51-ac)	8500	3548
S. Hilburn 69-A (80.74-ac)	5500	3588
J. B. Watson 12 (92.97-ac)	7600	3552
Humble, Ben F. Laird 8-B (56.92-ac)	¶	3721
Invincible Oil Co, M. B. Weiss 26 (81.27-ac)	10,000	3627
A. L. Johnson et al, J. R. Irion 2 (8.01-ac)	10,000	3812
Joe Long & Son, J. Wash 1	*	3676
W. H. Matthews et al, L. Martin 5 (20-ac)	7000	3737
C. L. McMahon & Bill Dunning, J. N. Peterson 8 (25-ac)	7500	3660
Milford Oil Co, W. Smith 4 (13.8-ac)	9200	3575
Overton Ref Co, King 1	7000	3662
Pitkin-Goldston Oil Co (Island), W. Williams 5 (16.7-ac)	9600	3653
Albert Plummer et al, J. R. Beall 8 (79-ac)	8500	3712
J. I. Roberts Prod Co-C. H. Murphy, Brightwell 3 (3.2-ac)	7200	3674
Shell, M. H. Bivins 11-B (90.67-ac)	7000	3658
J. S. Elder 7-A (51.51-ac)	9500	3588
J. Ben Watson 49 (385.2-ac)	9000	3629
J. Ben Watson 52 (385.2-ac)	7000	3597
Sun, Hilburn-Lloyd 18 (133.7-ac)	6500	3682
Texas Co, W. T. Chappell 5 (84.37-ac)	8500	3705
Tide Water, E. R. D. Bivins 21 (200-ac)	9200	3637
J. M. Blackman 12 (80.86-ac)	9000	3639
J. S. King 15 (81.18-ac)	8800	3600
Trans-State Oil Co, Smith 1	10,300	3591
Weaver-Crim Corp, Ben Peterson 8 (60-ac)	8500	3630
LONGVIEW AREA—		
Alma Oil Co, J. W. L. Younse 7 (86-ac)	7200	3685
Amerada, M. O. Sheppard 4 (21-ac)	8500	3551
Arkansas Drl Co, Barrier 1 (13⅓-ac)	6500	3661
Arkansas G&F Co, F. K. Lathrop 9-C (101.2-ac)	8600	3616
Annie E. Lee 7 (67.19-ac)	7000	3628
L. E. Orms 8 (56.44-ac)	9200	3569
Bishop Oil Corp, E. G. Richey 7 (25.86-ac)	8000	3606
Eastern Texas Pet Co, D. F. Smith 8-A (611.9-ac)	2500	3581
Fla-Tex Corp, J. T. Jones 4 (33.7-ac)	8500	3785
Humble, W. W. Holland 25 (201.63-ac)	10,500	3585
W. W. Lechner-G. A. Hubbard & Co, Harley 6 (18.47-ac)	9600	3566
Magnolia, L. J. Everett 27 (166.96-ac)	9300	3692
Mattie Dyer 5 (39.09-ac)	12,000	3559
Margay Oil Co, O. M. Victory 9 (87-ac)	5000	3627
Mudge Oil Co, J. W. Free 14-A (105-ac)	10,300	3717
New Process Prod. Co, Geo. Anderson 6 (8.61-ac)	7000	3535
Oils, Inc, A. J. Sanders 15 (73.63-ac)	8000	3630
B. F. Phillips et al, L. P. League 8-B (24.9-ac)	4500	3602
Rancho Oil Co, M. Fenn 1-B-X	*	730
Howard Russell et al, S. C. Slater 1 (50-ac)	500	3771
Sinclair Prairie, J. W. Akin 12-B (100-ac)	10,000	3602
J. W. Akin 14-B (100-ac)	11,000	3636
J. W. Akin 16-B (100-ac)	10,000	3602
Southland Drl Co, D. C. Shelton 3 (15.6-ac)	5500	3743
Southland & United East & West Oil Co, O'Byrne-Humble 15 (304-ac)	6000	3678
Southport Pet Co-T. L. James & Co, Thad Snoddy 1 (6.18-ac)	8400	3572
Stanolind-Simms, W. M. Harley 4-A-B (20-ac)	9000	3632
Stanolind-Sun-Atlantic, M. Hays 10 (102.63-ac)	9300	3569
M. Hays 11 (102.63-ac)	9500	3566
Texas Co, G. W. Clark 9 (60-ac)	7600	3617
E. R. Trail et al, C. T. Shelton 1 (42½-ac)	1000	3710
United East & West Oil Co, C. T. Shelton 4 (56-ac)	750	3700
ANDERSON COUNTY (Cayuga Field)—		
Tide Water-Texas Seaboard, N. N. Wills 20-A (832.29-ac)	3500	4089
ANDERSON COUNTY (Camp Hill Field)—		
Gulf, Davey & Royall 1-A	¶½	485
VAN ZANDT COUNTY (Van Field)—		
Humble, Sanger Inv. Co. 6 (200-ac)	1500	2919
LIMESTONE COUNTY—		
Pure Oil Co., Hester Ross 6-S	*	816

*Failures; †Junked; ¶Mil. cu. ft. gas.

Three Ector County Pools Partly Defined

San Angelo, Texas.—Three of the failures listed among the 13 completions reported the past week by West Texas counties involved outpost locations to established fields. There were eight producers, having a combined initial yield of 4850 barrels of oil and 10,000,000 cubic feet of gas; four dry holes and one junked hole.

Productive limits of the three most important oil areas in Ector County were partially defined by dry holes. Stanolind Oil & Gas Company's E. F. Cowden 5, C NW NE Section 27, Block 43, T&P. Ry. Survey, T-2-S, cut off the northwest trend of production in the South Cowden field in failing to make a commercial pumper after plugging back from 4447 feet for a heavy shot of nitro and acid treatment. Atlantic Oil Producing Company's T. P. Land Trust-Amerada 1, NWc W½ SE¼ Section 11, Block 43, T-1-S, situated one-half mile south of production in the North Cowden field, also failed to respond to a shot in lime after plugging back from 4391 feet to 4300 feet. Although plugging orders have not been issued, the Phillips Petroleum Company's John Scharbauer 1, near SEc Section 16, Block B-15, PSL Survey, has partially defined the productive limits of the Judkins-Connell field, original Ector County oil area, in failing to register production after drilling to the 3900-foot level.

North Texas Completons

Company, Well and Location	Init. Prod. Bbls.	Depth
ARCHER COUNTY—		
L. T. Burns et al, M. P. Anrdews 1,	*	985
L. F. Wilson 1-X, sec 122	*	1415
Continental & Underwood, H.L.&J.F. Ward 2-B	*	1058
Fain-McGaha Oil Corp, Mrs. C. S. Arnold 38	200	1217
J. C. Hamer et al, Harmonson 1	*	937
Hamer & Scholl, Longley 12	*	1026
W. B. Hamilton Pet Co, W. Coffield 26	50	1266
D. C. Giddings-Wilkins 3	*	1226
W. I. Pace 25, blk 99	*	1200
Mack Oil Co, J. S. Bridwell 5	20	932
Magee & Stipe, Wm. Justice 3, blk 6	35	1088
Perkins-Cullum Oil Co, C. L. Abercrombie 10, sec 157	25	1016
C. L. Abercrombie 12, sec 157	*	1231
Falls County 150, blk 14	80	1140
Falls County 152, blk 11	75	1165
Falls County, 153, blk 14	70	1135
Pet. Producers Co, Harmonson 14	75	975
J. T. Richardnon 5-D, blk 1	30	1241
Ray & Staniforth, T. B. Wilson 16.	100	1605
T. B. Wilson 3-B	200	1603
L. A. Wilkins et al, Archer County 1	*	965
CLAY COUNTY—		
E. G. Boardman et al, C. T. Taylor 1	*	1320
JACK COUNTY—		
J. Franklin Smith et al, J. W. Tanner 1	*	820
MONTAGUE COUNTY—		
O. V. Beck et al, C. L. Davenport 14	1000	1678
Benton & Holmes, C. L. Davenport 6-B	2880	1678
WICHITA COUNTY—		
American Properties Corp, J. E. Roller 8, blk 11	*	817
Burk Royalty Co, Allen-Kemp 6, blk 44	*	1260
C. W. Clark et al, Allen-Kemp 5-B, blk 44	15	840
Continental Oil Co, L. P. Douglas 4	1680	1935
The Texas Co, Allen-Kemp 18, sec 26	8	466
YOUNG COUNTY—		
Brazelton Bros, R. B. Ward-Belknap 5, sec 2248	40	609
Cable Oil Co, J. Williams 5	7	604
S. D. Glover et al, C. W. Johnson 1-B, blk 6	*	521
B. N. Honea et al, fee 11, sec 1492	40	915
Chas. Knox et al, W. B. Harrison 1	345	2769
Martin & Son, Ward-Belknap 2, sec 2248	70	604
R. F. Morgan et al, Belknap 1, sec 252	*	630
The Texas Co, Jeffery 8-B, sec 42	40	746
D. L. Wolf et al, L. Baker 2	*	465

*Failures; †Junked; ¶Mil. cu. ft. gas.

West Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
ANDREWS COUNTY (Fuhrman Field)—		
Fuhrman Pet. Corp., W. H. Boner 2-B	¶5-1500	4406
ECTOR COUNTY—		
Atlantic O. P. Co., TP Land Trust-Amerada 1	*	4391
Geo. E. Farley et al, W. E. Connell-Conoco 1	250	3658
Stanolind O&G Co., E. F. Cowden 5	*	4447
Roy A. Westbrook et al, F. V. Addis 3	¶5-105	3968
STERLING COUNTY—		
Merry Bros. & Perini, Inc.-Darby Pet. Co., R. L. Stansberry 1	*	3142
UPTON COUNTY—		
J. W. Ellis et al, J. W. Robbins 1	†	1890
WARD COUNTY—		
Atlantic O. P. Co., Johnson 19	105	2540
Lee Monroe 1	155	2451
California Co., B. D. Durgin 24	290	2599
R. A. Westbrook-W. K. Cayton-Harry Meredith, Bennett 5	1245	2529
WINKLER COUNTY—		
Joe C. Maxwell & Atlantic, Oscar Clapp 1	*	3487
FISHER COUNTY—		
Southern Oil Corp., D. E. King 2	1200	3125

*Failures; †Junked; ¶Mil. cu. ft. gas.

Texas Panhandle Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
GRAY COUNTY—		
Dyke Oil Co., L. C. McConnell 2	¶11-690	3252
Humble, J. H. Palmer 4	350	3115
King Royalty Co., W. J. Brown-Shell 3	200	3270
Plains Holding Co., A. Chapman 2	85	2814
Southern Pet. Expl. Co., J. G. Noel 4	245	3214
CARSON COUNTY—		
Gulf, E. Cooper 7	315	3023
HUTCHINSON COUNTY—		
Harry Stekoll et al, Whittenburg-Canadian 3-G	325	3060
WHEELER COUNTY—		
Champlin Ref. Co., G. W. Williams 7	¶9-1950	2528
Magnolia, Jeff Mankins 1	150	2230
Shell, T. J. D'Spain 6	430	2541
T. J. D'Spain 8	280	2527
Skelly Oil Co., O. L. Derrick 13	340	2523
Texas Co., P. M. Keller 7	¶27-4015	2530

*Failures; †Junked; ¶Mil. cu. ft. gas.

Prolific Wells Boost Panhandle Production

Pampa, Texas.—Supported by several prolific oil wells in western Wheeler County, the Texas Panhandle contributed 9375 barrels of oil and 47,000,000 cubic feet of gas production the past week through the completion of 12 flowing and pumping wells. No failures were recorded for this period.

An initial yield of 4015 barrels of oil and 27,000,000 cubic feet of gas was credited to The Texas Company's P. M. Keller 7, situated in the highly productive area in western Wheeler County, after taking in three separate oil and gas horizons between 2442 feet and 2530 feet. Champlin Refining Company's G. W. Williams 7 flowed 1935 barrels of oil and 9,000,000 cubic feet of gas from granite wash formation, with a total depth of 2528 feet. The oil zone was penetrated while carrying a loaded hole, making it impossible to accurately log the producing zones.

Dyke Oil Company, Tulsa, uncovered a prolific zone on its L. C. McConnell 80-acre lease, situated near the Gray-Carson County line, in developing a natural flow of 690 barrels daily from its second test, located 990 feet south and 330 feet west of the NEc W½ SE¼ Section 187, Block 3, I&GN Ry. Survey, Gray County. Production was from granite wash at 3181-84 feet and 3245-52 feet.

New Producer in Kittrell Field

Houston.—Sun Oil Company's Huffman 1, 660 feet northwest of Huffman 1, C. McEllis survey, Kittrell field, Houston County, was completed during the past week at 1995 feet for 242 barrels per day. The flow was through a five-sixteenths-inch choke with a tubing pressure of 300 pounds and a casing pressure of 500 pounds. Seven-inch casing was set at 1960 feet on top of oil sands found from 1982 to 1987 feet.

Production from Humble Oil & Refining Company's Shaw lease from October, 1934, through the first 20 days of March, 1935, was approximately 26,387 barrels of crude oil.

In Houston County, a Tulsa, Oklahoma, operator paid $10 per acre for 10-year commercial leases on the north 80 acres of the J. M. Perkins 150-acre tract in the Jessie O. Thompson Survey. Also 200 acres royalty was purchased by the operator. for which he paid $30 per acre base. This acreage is located on the west line of the county

about three miles south of the north county line and joins Humble Oil & Refining Company's large block on the south. Another operator is assembling a drilling block, most of the acreage will be in Houston County Coal Company land. At present the operator has about 2500 acres which is located about two miles north of Lovelady, in the Joes Sanks, Moses Gregg, J. B. Hartt and C. B. M. Horton Surveys. It is reported that a test well is to be drilled to 2500 feet. This acreage joins the Joe Burham block on the north.

In Angelina County, Bryan & Lyons have made location for Frank Allen 1, 900 feet from the northeast line and 150 feet from the northwest line of 53.3-acre tract in the Barr & Davenport Survey. The well is located about eight miles northwest of Lufkin. The operators have approximately 6000 acres in the above area. Marrs & McLain who have a large block in Angelina County, have been adding to the block from time to time. The block is located about seven miles north and east of Lufkin. One dollar per acre is being paid for additional acreage on the east end of the block. Mabry and Jordan are assembling a 1500-acre block on the north line of the county, about nine miles northeast of Lufkin. This block is taken around the old Saline in the F. McMahon Survey.

Wildcat Showing Mile East of Dinero

San Antonio, Texas. — Smith and Storey were setting casing late in the week on a showing encountered in Frederick 1, three-fourths of a mile east of the town of Dinero in Live Oak County. Saturated cores were taken from 5208-17 feet in the Yegua sand, which were sufficiently promising to warrant setting casing without making a drill stem test.

The well is located 26,000 feet from the southwest line and 4100 feet from the northeast line of the Jane Curry Survey. It is about four miles northeast of the McNeill field and about a mile and a half north of the McLucas field production.

This well has an elevation of 104 feet, derrick floor. It topped the Hockleyensis at 4155 feet, had a sand at 4264-71 feet, which showed considerable gas. It topped the Pettus sand at 4980 feet and the Yegua sand at 5208 feet.

Several miles west of this test and north of the McNeill field, J. O. Whittington et al's Little 1, M. M. Shipp Survey, is drilling ahead from 5314 feet. This well was taken over at the above depth from Henderson Coquat et al and is to be carried ahead to the Cook Mountain.

A south offset to the McNeill field discovery well, Lion Oil Refining Company is coring for the 4300-foot Hockleyensis sand in P. E. McNeill Estate 4.

North Cowden Is Getting Pipe Line Outlets

San Angelo, Texas.—Construction of about 50 miles of six- and four-inch pipe line units have been started by Humble Pipe Line Company in providing a greater crude outlet for the North Cowden field, Ector County, with an extension to each of the four separate oil areas in Andrews County. Humble Oil & Refining Company is the only purchaser serving the above fields, which yield sulphur crude varying from 29 to 33 gravity.

Humble Pipe Line Company is laying a 14-mile four-inch line parallel with an existing four-inch carrier between the South Cowden and North Cowden fields. About 30 miles of six-inch line will be required to extend from the latter area via the town of Andrews to the Means field, situated in northern Andrews County and fully controlled by Humble Oil & Refining Company. A four-inch lateral line will be extended westward from a point about 3½ miles south of Andrews to tie into existing network of gathering lines that serve the Parker, Fuhrman and Deep Rock-Ogden fields. A temporary four-inch unit connecting the latter group with the North Cowden field will be dismantled.

Escobas Field

San Antonio, Texas.—Two rigs are active in the Escobas field of Zapata County, the result being a new completion in the 1200-foot sand about every five days.

Alva Niles' M. Trevino 5-C, Block 15, Section 412, is pumping 25 barrels per day from 1202-42 feet.

The Texas Company's Measles 64, Cerrito Blanco Grant, is flowing and pumping 110 barrels per day from 1210-21 feet, hole bottomed at 1223 feet.

Bee County

San Antonio.—Humble Oil & Refining Company's Laura Thompson 2, Garrett Roche Survey, wildcat 13 miles southeast of Beeville, Bee County, encountered a sand and sandy shale section at 5291-99 feet, showing saturation. It reamed to 5250 feet and is preparing for drill stem test.

Two Good Wells At Coleto Creek

San Antonio, Texas.—Two excellent completions and two new operations sum up activity in the Coleto Creek field, Victoria County, during the week.

C. M. C. Oil Company (American Liberty) completed A. Prybil 2, for 14 barrels per hour through ½-inch choke from 2800-foot sand. Upon a ¼-inch choke, the flow was reduced to eight barrels per hour. Prybil 3 has been started.

Cox and Hooper's J. Zimmer 2 was completed for an initial flow of 15 barrels per hour from sand at 2841-47 feet.

Plummer Drilling Company is rigging up J. Zimmer 3. Same Company's E. Terrell 1-C, west outpost well, which made considerable oil from 2805 feet, after being put on gas jet, went dead. It is not being plugged back to perforate opposite the 2100-foot sand in effort to obtain gas production.

The Texas Company is preparing to resume operations on its A. M. McFaddin block in the McFaddin field, Victoria County, where 6600-foot sand has been proved. The new location is McFaddin 9, 150 feet from the southeast line and 6100 feet from the northeast line of the J. M. Rine survey. The well is 1840 feet north of McFaddin 2, deep oil producer.

Loma Novio Field Extended Two Directions

San Antonio, Texas.—Frank Gravis' C W. Hahl 1, one mile west of the Loma Novio field, Duval County, is flowing 200 barrels of fluid, via gas jets, from sand at 2554-58 feet. It includes about 35 barrels of oil and the remainder salt water and basic sediment. Elevation is 582 feet, derrick floor.

L & R Oil & Gas Company's C. W. Hahl 1, 1½ miles southwest of the field, is a 20,000,000 cubic foot gasser with 775 pounds rock pressure at 2571-78 feet. The well drilled ahead, tested salt water and plugged back to be completed as a gasser.

These wells, while not commercial oil producers, definitely extend the producing area and makes it appear to be a major proposition.

Two wells have been commenced to the north of the producing area, one by Al Buchanan and Blanco Oil Company and another by Hamil and Hamil. They are two miles and one mile from the producing zone, respectively. Tex-La Oil Company has commenced a well 1½ miles south of production.

New Producing Area For Starr County

San Antonio, Texas.—A new producing area in eastern Starr County seems possible as a result of the showing encountered in Lester & Duffield, Inc., and R. H. Vice et al's E. B. Carruth 1. The well was gassing about 3,000,000 cubic feet of gas, along with a spray of several barrels of oil per day from a depth of 2908 feet, identified as near the Frio.

The well is located 3690 feet from the south line and 3300 feet from the west line of Share 1-B, Porcion 91-92, and is slightly more than two miles east of the Barbacoas field production.

It originally was drilled to 4016 feet, ran an electric formation testing device and was plugged back, sidetracked and drilled to the total depth of 2908 feet. It showed gas sand at 2882-95 feet and oil saturation at 2895-2908 feet, whereupon seven-inch casing was set at 2895 feet.

In the Barbacoas field, Merren, Johnson and Bond's Starr County Cattle Company 4, Block 24, Porcion 89, is at a total depth of 4213 feet, but has plugged to 2600 feet and is preparing to sidetrack. It will test a sand topped at 2730, which originally gave showing of production.

Conway & Emanuel's Starr County Cattle Company 1, Block 57, Porcion 89, southwest of the field, is still shut down at 2711 feet. It sanded up when completion was attempted, and it is now awaiting tubing to be run to effect final completion.

Pearsall Test Causes Lease Play

San Antonio, Texas.—A leasing play along the western portoin of Atascosa County and extending across much of Frio County is the follow-up to the recent establishment of Navarro sand production near Pearsall by the Amerada Petroleum Corporation.

Amerada Petroleum Corporation's Davies & Burke 1, 3200 feet southwest of the discovery well in the Pearsall field, has been spudded and set surface casing. It will test the 3900-foot sand producing in two wells.

J. H. Perry, of Corpus Christi, has taken approximately 7500 acres, centering around the M. H. Davis ranch in Atascosa and Frio Counties, between Charlotte and Davis Switch. A 5000-foot test is to be commenced within 90 days.

Northwest of this block, another drilling block is being assembled for a Navarro sand test. It is to be drilled near the town of Schattel, but in Frio County.

W. D. Bacon et al's J. F. Burns 1, Clifton Survey, several miles farther north, is to be started shortly. It is a 3500-foot test on a 5100-acre block.

Shoemaker et al's M. Roach Estate 1, C. Wentzel Survey, near Bigfoot, is shut down at 2500 feet after testing some gas and a small quantity of oil in Navarro sand topped at 2365 feet.

Lefevre & Spice have taken nearly 20,000 acres in trend southwest toward Pearsall, the acreage being taken on a commercial basis. It is to be turned over to a major company, it is said.

Good Wells Found In Jacob Field

San Antonio, Texas. — Jacob field, McMullen County, continues to provide excellent shallow producers. Motes & Bedingfield completed H. L. Lark 5, Block 134, Scrugham Survey, for an initial output of 10 barrels an hour on pump from sand at 983-1002 feet. Casing is being set at 983 feet on Lark 4, and Lark 5 is preparing to spud.

Across the lease line, Loma Oil Company has set casing at 948 feet in Jacob 35-A, Survey No. 8, and has two more locations to be drilled.

John F. Camp is starting a campaign calling for three wells on the Lark lease.

A couple of miles south of the field, but north of the town of Calliham, Witherspoon Oil Company's Lark 1, Block 110, has been abandoned at 1219 feet. It showed for a gasser spraying some oil in the Jacob sand at 1021-26 feet. Deepened, it made salt water and was carried to 1219 feet, again showing salt water in the Yegua sand at 1121-39 feet.

Howard and Claunch's Claunch 4, M. Hely Survey, in the South Calliham field, is a 6,000,000 cubic foot gasser at 765 feet. Four-inch casing is set at 755 feet.

San Antonio, Texas.—Quintana Petroleum Corporation's Tom O'Connor 7-A, Refugio County, is being completed as seventh producer in the Tomoconnor field. Drill stem test made of sand at 5780-5827 feet showed 18 thribbles of oil and 124 pounds pressure in 125 minutes. Casing has been set.

Outpost Hidalgo County Tests Hold Attention

San Antonio, Texas.—Two outpost wells to the southeast of the Samfordyce field, Hidalgo County, hold considerable attention. Their successful completion likely will lead to the establishment of production on the Mexican side of the Rio Grande.

Weekly Oil Corporation is reported to have made a deal for the drilling of four wells on the Mexican side of the border, although the actual transaction has not been confirmed.

The most outstanding test is Ernest Powell's George A. Moore 1, Porcion 42, one mile southeast of production and near the river. It is on a direct trend with other production developed along this two-mile northwest-southeast producing zone. The well is down approximately 2000 feet and should be coring the sand within several days.

D. D. Oil Company and K. D. Harrison's Mrs. Lula George 1, Tract 13, Porcion 41, one-fourth mile east of the south end of production, is drilling at 1390 feet.

There are eleven active operations in the field, several of which are on the sand and in process of completion.

The north side of the oil production was considered established by the completion of a large gasser in Wheelock and Collins' Seabury 1, in Tract 256, Porcion 38. The well showed a working pressure of 1100 pounds through ⅛-inch choke and 1200 pounds pressure, closed in, on casing. It had sand at 2738-56 feet showing gas, shale at 2756-66.5 feet, sand cap 2766.5-68.5 feet, oil sand at 2768.5-79 feet and shale at 2779-87 feet, drill stem test of lower sand showing considerable oil. Casing was perforated at 2774-79 feet. It is possible that this well will start making oil after the pressure declines, in as much as the sand was well saturated.

Union Sulphur Company's American Rio Grande Land & Irrigation Company 3, lot 2082, block 86, Llano Grande grant, is one of the most important wildcats drilling in South Texas. If this Hidalgo County test finds production it will open a vast area for production, since it will cause a play to follow the coast line from Mexico to Corpus Christi. Likewise, it would open the area from the Samfordyce field to the coast. The well, which now is below 7300 feet, is preparing to run casing. Reports are that it has cored a very promising oil sand. This is the third test the company has drilled in the immediate area, mechanical difficulties having ruined the others.

West Tuleta Extended Southwest

San Antonio, Texas.—Jamison and Byrons P. L. Campbell 1 extended the West Tuleta field, Bee County, one mile to the southwest March 29 when it was completed in the Pettus sand at 3956-60 feet for an initial flow of nine barrels per hour through 3/16-inch choke showing 125 pounds tubing pressure and 425 pounds casing pressure.

The importance of this strike is that it opens another area for development almost as large as the present West Tuleta field. It is located 2000 feet north of the south corner, thence 205 feet west at right angles in the Brooks and Burleson Survey, Abstract 129, approximately one mile southwest of any production in the field.

The production is coming from the top of the sand, rather than from several feet below the top of the producing horizon, as is the case in the majority of the producers in the western portion of the proved area. Most of the wells show high gas pressure in the upper portion of the Pettus section and casing is set from six to 15 feet below the top of the sand to enable completion with the proper gas/oil ratio. On the northeast side of the field, the type of production is similar to the new extension well. As a result, the initial flow is much larger and handling is easier. Also, it is believed that recovery will be greater where the oil comes from the full sand section, rather than from only a portion of it.

The completion of this well increases the probable producing area to in excess of 1500 acres.

South Texas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
BEE COUNTY—		
Mills Bennett, J. P. Harris 3, nw sec 9 (W. Tuleta)	*	4291
Blanco Oil Co. & Al Buchanan, P. Perez 3-A, se sec 9, J. M. Uranga gr (W. Tuleta)	175	3891
Diamond Half Oil Co., McKinney 1, 2740 ft se along n cor of fence, thence sw at rt/a in Spencer Morris sur (W. Tuleta)	*	4125
Heyser, Heard & Walton, Walton 1-A, blk 1, nw sec 20 (W. Tuleta)	55	3101
Houston Oil Co., Ed Strauss 10, sw sec 9 (W. Tuleta)	250	3988
Navarro Oil Co., J. E. Roth 1, 330 ft wl, 990 sl, sec 7 (Dirks)	*	3914
Tuleta Oil Co., Skinner Harris 6, nw sec 10 (W. Tuleta)	250	3931
BEXAR COUNTY—		
Effie Weilbacher et al, Caroline Hansen 1, 450 ft sl, 150 ft wl 40-ac tr, John Christopher sur	*	20
DUVAL COUNTY—		
Armoil Prod. Co., Heller 1, se sec 44 (Gov't Wells)	70	2340
Mills Bennett, W. R. Peters, 330 ft sl and el nw sec 178 (N. Koh'er)	*	3167
Central Producers, Inc., Wendt 3-A, ne ne sec 43 (Gov't Wells)	80	2320
Frank Gravis, C. W. Hahl 1, 330 ft sl and el ne sec 64 (Loma Novio)	100	2558
L. & H. Oil Co., C. W. Hahl 1, 330 ft sl and el ne sec 63 (Loma Novio) pb and perf 2571-78	¶20	2800
Magnolia, Brennan Benavides 8, blk 465, Hale sub, Arispe gr (Cole)	200	2780
Hahl-Southland 14, nw sec 61 (Gov't Wells)	200	2316
J. O. Wilson 12, sec 136 (Gov't Wells)	82	2315
HIDALGO COUNTY—		
Bridwell Oil Co., Pena 2, sh 217, por 40 (Samfordyce)	400	2755
Skelly Oil Co., Seabury et al 1, tr 256, por 38 (Samfordyce)	300	2800
Wheelock & Collins, Seabury 1, tr 256, por 38 (Samfordyce)	¶20	2787
KARNES COUNTY—		
Herman Brown, Edmonia Timberg 1, 330 ft nel, 990 ft sel of 177-ac tr, J. Johnson sur (Burnell)	¶20	3303
KLEBERG COUNTY—		
Clymore Prod. Co. (Ryals & Bartlett) Flato 1, ne se sec 40, lot 9, blk 4, KT&I sur (Kingsville)	¶30-20	2795
LEE COUNTY—		
James E. Pederson, C. A. Turner 1, 1860 ft nl, 150 ft el of 65-ac tr, D. Hudson sur	*	6560
LIVE OAK COUNTY—		
The California Co., G. Blankenship 1, 466 ft swl, 2000 ft sel of A. A. Dunn sur, sec 508	*	4902
McMULLEN COUNTY—		
Howard & Claunch, Claunch 3, 1200 ft swl, 1800 ft sel M. Hely sur (S. Calliham)	*	460
Claunch 4, M. Hely sur (S. Calliham)	¶6	765
Motes & Bedingfield, H. L. Lark 5, blk 134 (Jacob)	250	1002
Witherspoon Oil Co., H. L. Lark 1, 160 ft sl and el blk 110, Larb sub, E. W. B. Scrugham sur (Calliham)	*	1219
REFUGIO COUNTY—		
Houston Oil Co., P. H. Rooke 19, Mullin sur (Refugio)	700	4899
SAN PATRICIO COUNTY—		
Plymouth Oil Co., E. H. Welder 2-B, start at sw cor of B lease, thence nw along wl 2100 ft, thence 350 ft ne at rt/a in Musquiz sur (Sinton) pb 5413 ft	15	6854
VICTORIA COUNTY—		
C. M. C. Oil Co. (American Liberty) A. Prybill 2, R. Manchola gr (Coleto Creek)	400	2800
Cox & Hooper, J. Zimmer 2, R. Manchola gr (Coleto Creek)	400	2847
WEBB COUNTY—		
Associated Oil Co., A. M. Bruni Est. 2, sec 7, Foltz sub, Arispe gr (Cole-Bruni townsite)	800	3405
Highland Oil Co., A. M. Bruni 2, sec 7, Arispe gr (Cole-Bruni townsite)	1000	3409
Magnolia Pet. Co., Benavides 8-A, nw ne sec 660 (W. Cole)	50	2351
Peerless O&G Co. and L. G. Seeligson, A. M. Bruni Est. 2, sec 6, Arispe gr (Cole-Bruni townsite)	1000	3418
Sun Oil Co., A. M. Bruni 6, blk 15, sec 5, Arispe gr (Cole-Bruni townsite) pb 3429	530	3433
WILLIAMSON COUNTY—		
G. L. Rowsey, Tr., Heap 7-A, H. White sur (Byersville)	40	840
ZAPATA COUNTY—		
Alva J. Niles, M. Trevino 50, blk 15, sec 412 (Escobas)	25	1242
Nordan & Morris, C. Vela 1, 660 ft sel, 1320 ft nel blk 6, re-plat por 20 (Lopena)	¶40	2316
The Texas Co., Measles 64, Cerrito Blanco gr (Escobas)	110	1223

*Failures; †Junked; ¶Mil. cu. ft. gas.

Bruni Gets Four More Large Wells

San Antonio, Texas. — Four more large oil producers have been completed in the Bruni townsite area of the Cole field, Webb County. Several more were in process of completion late in the week.

Associated Oil Company's Bruni 2 flowed 25 barrels per hour through 3/16-inch choke from sand at 3392-3405 feet. Highland Oil Company's A. M. Bruni 2 is a 30-barrel per hour well through 3/16-inch choke from 3402-09 feet. Peerless Oil and Gas Company and L. G. Seeligson's Bruni 2 flowed 30 barrels per hour through ¼-inch choke from sand at 3414-18 feet, showing 150 pounds pressure on tubing and 900 pounds on casing. Sun Oil Company's A. M. Bruni 6, drilled to 3433 feet, topping sand at 3420 feet. It plugged back to 3429 feet and flowed 111 barrels of oil and 39 barrels of salt water in five hours.

Calhoun County Test Showing for Producer

San Antonio, Texas. — Steinberger Petroleum Corporation's Shofner 1, Calhoun County, is setting casing after a drill stem test of a Marginulina sand at 6239 showed 3460 feet of 43 gravity oil at 84 degrees, and 125 pounds pressure in 24 minutes. Cores recovered at 6224-32 were hard formation, and cores recovered from 6231-39 showed sand which gave up some oil under ether. Drill stem tester was seated at 6216 feet.

The well is in the east corner of 100-acre tract in A. Esparza Survey, one fourth mile from Steen Drilling Company's wet gasser, completed several months ago at 6158 feet, and opening the Port Lavaca field. A drill stem test of the Shofner well at 6100-80 feet developed 700 pounds pressure and a spray of distillate in 13 minutes. Coring deeper, the formation showed several breaks, indicating that the well is in a new sand lens, but in the same producing section.

Large Well Found In McNeill Field

San Antonio, Texas.—Lion Oil Refining Company's P. E. McNeill 4, south offset to the McNeill field discovery well, Live Oak County, flowed oil 40 feet into the derrick on a two-minute drill stem test from a Hockleyensis sand at 4372-81 feet. Casing is being set. It appears to be one of the largest producers drilled in this area and indicates that the McNeill field will be a producer of major importance.

Thompson Outpost Test Sets Casing

Houston.—Gulf Production Company's W. D. Myers 1, Thompson field, Ft. Bend County, was waiting on cement to set at the close of the week with six-inch casing landed at 5325 feet on top of an oil sand. If this well proves a producer it will extend the field 1500 feet in the northeastern direction.

The bottom of the hole is 5400 feet where the oil sand was topped at 5336 feet. An electrical logging device showed two ohms from 5336 to 5382 feet.

The well is located 2777 feet west, 340 feet north of the southeast corner of 202--acre tract in the H. Chrisman Survey.

The Thompson field has taken on new life since Naylor brought in Gehr 6, some time ago to extend the field in this direction.

New Producing Sand In Dickinson Field

Houston.—A new producing sand for the Dickinson field of Galveston County has been discovered by Humble Oil & Refining Company's Danielson 1, J. Sellers Survey, 2500 feet southeast of the discovery well, when it made a drill stem test from 9040 to 9127 feet and showed 800 feet of oil with a 400-pound pressure in 15 minutes. The test was made through a quarter-inch choke on top and bottom. From 9109 to 9114 feet a soft sand was cored which showed oil.

On a recent drill stem test from 8755 to 8954 feet the well showed eight thribbles of drilling mud cut with gas. The test was made in 39 minutes through a quarter-inch choke on top and bottom.

The same operator's Schaffer 1, 3500 feet west of the discovery well, W. K. Wilson Survey, was drilling in shale at 8763 feet while Maco Stewart A-3, 338 feet from easterly northeast corner; 2016 feet from the east line of 119-acre tract in J. Sellers Survey, was waiting on cement to set at 1816 feet.

Texas Gulf Coast Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CONROE—		
West Prod. Co., Foster Lbr. Co. 2..	100	5105
BATSON—		
John Deering, M. Hooks 2	*	1700
BLUE RIDGE—		
Transtate Oil Co., Blakley 1	140	3762
BOLING—		
Navarro Oil Co., H. R. Farmer 1..	240	4297
HIGH ISLAND—		
Yount Lee, Smith 23	180	4956
KITTRELL—		
Sun, Huffman 2	242	1995
LIVINGSTON—		
Owenby Drlg. Co., Pratt 2	28	4240
Refugio Oil Co. & J. C. Werby, Dick & Faling 4	656	4256
MANVEL—		
Texas Co., J. L. Lemmer 1	236	4122
MOSS BLUFF—		
J. M. Rich, W. A. Carter 1	*	931
PIERCE JUNCTION—		
Gulf, Taylor 38	100	3800
PORT NECHES—		
Texas Co., Polk-Kuhn-Glass 2 (wo)	40	3508
SOUR LAKE—		
Alpha Pet. Co., Weiss 3	*	6809
SOUTH LIBERTY—		
Sun, Mitchell 43 (wo)	80	1261
TOMBALL—		
Amerada-Stanolind, H. G. Felber 1..	¶½	5570
Humble, E. Petrich 1	566	5613
W. Rudel 3	338	5600
FT. BEND COUNTY—		
Turnbull & Irwin, Hermann Hospital 1, J. S. Cartwright sur	*	6001
TRINITY COUNTY—		
Boone Bros., Tex. L. L. L. Co. 1-C	*	2640
WASHINGTON COUNTY—		
Arkansas F. O. Co., A. Witscharke 1, J. D. Miller sur	*	4050

*Failures; †Junked; ¶Mil. cu. ft. gas.

South Houston

Houston.—Johnson & Johnson's Fee Land 1, in the city limits of South Houston, H. & T. C. Survey, spudded on Friday, March 29, 1935. A barbecue was given by the city council of South Houston when the well was spudded. There was a crowd of approximately 2000 people that witnessed the well spud in.

Mykawa

Houston.—West Production Company's C. Holmes 1, F. J. Rothaas Survey, approximately 800 or 1000 feet northeast of the same operators' Ryemon 1, which extended the Mykawa field, Harris County, some time ago, was killed during the past week after flowing an ungauged volume of oil. The well made salt water and was killed and the screen was pulled. The bottom of the hole is 4750 feet.

It was undecided at the close of the week what the operators would do with the well. It is understood that a new setting will be made.

St. Landry Parish

Lake Charles, La.—Humble Oil & Refining Company leased the C. T. Whitman Lumber Company 19,500 acres northeast of Port Barre and west of Mellville in St. Landry Parish during the past week. Consideration was one dollar per acre for two years paid up leases, calling for one dollar per acre annual rental for five years.

Lake Charles, La.—Around Sections 90- and 91-5s-5e, Lafayette Parish, E. M. Berryhill has assembled a block of 5000 acres. The consideration was one dollar per acre cash bonus with the same amount annual rental.

New Pool Likely For Jefferson Parish

Lake Charles, La.—The consensus of opinion in South Louisiana is that The Texas Company's Bayou St. Denis 1, Jefferson Parish, will be the discovery well for a new oil field in the Gulf Coast.

During the past week the well made a drill stem test from 8070 to 8090 feet in the Oligocene formation and showed 20 thribbles of oil and 24 thribbles of salt water and 18 thribbles of mud. The well also showed 25-pound pressure. The test was made through a quarter-inch choke on bottom and a three eighths-inch choke on top. The test was made in 20 minutes. On an electrical logging device from 8073 to 8078 feet the well showed seven ohms and from 8087 to 8090 feet salt water. At the close of the week it was coring ahead in the Oligocene looking for a better sand.

The well could have made a producer in the Miocene, as reported some time ago. A gas show was found at 1519 feet and from 5094 to 5137 feet the operators had several good showings of oil and in this section had 10 feet of saturated oil sand. From 5647 to 5783 feet another good section was found which showed oil. The operators had enough sand to make a good well in the Miocene formation. From 6846 to 6881 feet another good body of sand was found but the operators decided to carry the well down and then plug back if no other sand was found.

Calcasieu Parish

Lake Charles, La.—Gulf Refining Company has abandoned W. H. Starks 1, Section 26-11s-12w, six miles south of the Vinton field, Calcasieu Parish, at 8556 feet. This well was drilled on a large block acquired from W. H. Starks. Humble Oil & Refining Company is a major lease holder in the area of the abandoned test. It is reported that another test will be drilled in the area soon.

Humble Oil & Refining Company has taken a block of approximately 7000 acres centering around sections 17 and 18 township 11s, range 10w, in southern Calcasieu Parish. Consideration for 2000 acres of the block was 50c per acre for six months exploration lease, calling for $2.50 per acre upon selection and the same amount annual rental. The remaining 5000 acres were taken for the same amount with only one dollar per acre annual rental. Gulf Refining Company also took 860 acres in this area paying one dollar per acre cash bonus with one dollar per acre annual rental.

South Gillis Field Tests Are in Sand

Lake Charles, La.—In the Gillis field of Calcasieu Parish, Fohs Oil Company's Castle 2, Section 14-9s-8w, quarter mile southwest of Castle 1, is preparing to take another core at 7030 feet. This test has been cored the past six days and now is 39 feet in the first pay sand, but only four feet into the sand that produces in Castle 1. On the cores the well showed both gas and oil. A directional survey and an electrical logging device will be run on the test and then seven-inch casing will be set. This well will be the next producer for the South Gillis Field.

The same operator's Castle 3, Section 13-9s-8w, 658 feet due east of Castle 1, was drilling deeper at the end of the week after passing through the pay sand that was found in Castle 1. The well was down to 7215 feet.

Castle 4, one location east of Castle 3, was coring at 7250 feet and will be carried on down to an undetermined depth. It will search for new sands lying below the regular producing sand.

The Gillis field is divided into two pools. The north pool seemingly belonging to Union Sulphur Company and The Texas Company and the south pool belonging to Fohs Oil Company. It is definitely known that a large fault exists between Fohs Oil Company's present operations and Union Sulphur Company's Castle 1 and 2. The latter company's wells are now drilling below the producing horizon for the field and are located only 660 feet due north of Fohs Oil Company's Castle 1. Future development will reveal some interesting facts concerning the Gillis field and two different pools located so close together.

Union Sulphur Company's Barbe Estate 2, is averaging 431 barrels of oil daily with 31 percent salt water with a 900-pound tubing pressure. State 1 is averaging 479 barrels per day with 12 percent salt water with a 1060-pound pressure; State 2 is averaging 513 barrels per day with no water and Powell Lumber Company 1 is averaging 568 barrels per day with no water and a 2010-pound pressure.

Calcasieu Parish

Lake Charles, La.—Nichols-McCaleb's Gray 1, Section 22-8s-13w, northwest of the Starks field, Calcasieu Parish, was preparing to start up at the close of the week after being shut down at 863 feet.

At 721 feet the operators lost part of the hole while drilling in sand. From 721 feet to 860 feet it had a sticky shale with thin streaks of sand. At 860 feet a showing of gas with a slight trace of oil was found.

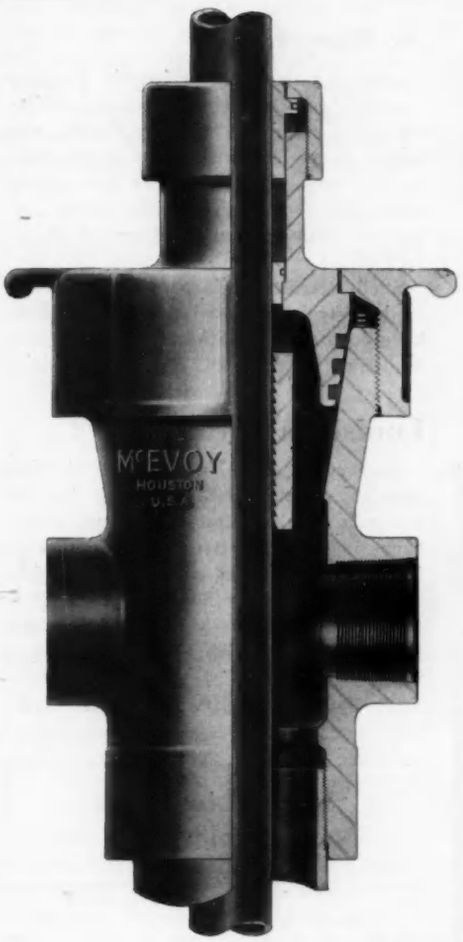
The well is located 60 feet away from a test that encountered 23 feet of sand at 2480 feet. Two other wells were drilled on this old prospect by Hamilton Oil Company in 1904 which had gas showings at 800 feet.

Nichols McCaleb has approximately 3500 acres surrounding the well and Sun Oil Company controls 200 acres. The wildcat will be drilled to 3200 feet unless commercial production is found at a lesser depth.

Deep Iberia Test Abandoned

Lake Charles, La.—The deepest well yet drilled in the new Iberia field and the first well to top the Oligocene formation in this field of Iberia Parish, was The Texas Company's H. C. Henzen 1, which was abandoned during the past week at 7934 feet in heaving shale.

The Oligocene formation was topped at 7548 feet, and carried a slight showing of oil in sands from 7637 to 7677 feet. A show of gas was noticed from



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* Used with a Ratchet Swage and a McEvoy Automatic Safety Pressure Head, it is an efficient BLOWOUT PREVENTER while drilling. It can be converted into either a Slip Type or a Hanger Type TUBING HEAD when tubing is run. Its simplicity of construction renders it an ideal Tubing Head for flowing or pumping wells under pressure.

* The McEvoy Automatic Safety Pressure Head can also be operated by the McEvoy Inserter. It is a remarkably fast-operating and certain-sealing Blowout Preventer, a description of which can be found in the Composite Catalog.

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See 1935 COMPOSITE CATALOG Pages 631 to 638

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7548 to 7550 feet. A broken sand was found from 7753 to 7754 feet, which contained shows of oil. This was the first showing of oil in a well to be drilled to the Oligocene formation in this old field. A drill stem was stuck at 7934 feet where a test was to be made of the sands but due to heaving shale the well was plugged and abandoned. It is reported that this well was drilled too far away from the dome and if it had been a little closer the chances for a producer would have been better. The well is located in Section 54-12s-5e.

Another interesting test drilling for the Oligocene formation is Harrison & Abercrombie's Schwing 3, 100 feet scuth and east of Y. D. Spell's Bernard 1, section 56-12s-7e. At the end of the week the well was drilling at 5923 feet after plugging back from 6505 feet. It is reported that this well drilled into salt and was plugged back. Helis Oil Company's Bernard 3, 300 feet north and 100 feet east of Y. D. Spell's Bernard 1, was drilling in sand at 3705 feet at the end of the week after toping the formation at 3604 feet. If this well stays in the sand formation it is liable to pick up the producing horizon that was discovered by Y. D. Spell's Bernard 1, which has been making its allowable since July 4, 1934. The production has been good on the test and has caused considerable drilling on the old dome for the new producing sand.

In Iberville and West Baton Rouge Parishes, Shell Petroleum Corporation leased the Morley Cypress Company's 14,000 acres scattered through the above two parishes; also the Base Cooperage 3900 acres. The consideration was 50c per acre for six months at which time they can extend it an additional six months for 50c per acre for five dollars per acre upon selection and the same amount annual rental for five years.

St. Mary Parish

Lake Charles, La.—Edwards Drilling Company's Chetemaches 1, Section 34-13s-9e, near Charenton, St. Mary Parish, was coring ahead below 8067 feet at the close of the week. The operators have cored from 7809 feet to the present depth and are understood to have had several showings of oil.

Shell Petroleum Corporation and Amerada Petroleum Company is reported to have donated an additional $20,000 for the deepening of the well.

Louisiana Permits

Shreveport, La.—Twenty-three drilling permits were issued last week by the minerals division, Louisiana Conservation Commission. Six of the permits were for North Louisiana, with five for Caddo Parish and one for Sabine Parish. The 17 in south Louisiana were divided among the following parishes: Acadia, three; Beauregard, one; Calcasieu, five; Iberia, five; Plaquemines, two; and St. Landry, one.

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South Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CAILLOU ISLAND—		
Texas Co., State Caillou Island 18	*	4228
EAST HACKBERRY—		
Calcasieu Oil Co., Hanzen 3	*	6061
Watkins 34 (wo)	15	2973
Sutton Oil Co., R. Ellender 1.....	40	3321
EDGERLY—		
Emerson Oil Co., Paraffin 1	*	3725
JENNINGS—		
Semar-Tolson & Gardener, Houssiere-Latrelle 1	*	1870
Yount-Lee, Houssiere-Latrelle 10 (wo)	*	7805
LAKE BARRE—		
Texas Co., State Lake Barre 31....	955	3518
NEW IBERIA—		
Texas Co., H. C. Henzen 1	*	7934
SULPHUR—		
Union Sulphur Co., Fee 790	*	5376
CALCASIEU PARISH—		
Gulf, W. H. Stark 1, 1650 ft w and 7980 ft s of nec of sec 26-11s-12w	*	8556

*Failures; †Junked; ¶Mil. cu. ft. gas.

Roanoke Well Is Plugged Back

Lake Charles, La.—Humble Oil & Refining Company's Kratzer 1, Roanoke field, Jefferson Davis Parish, plugged back from 8830 feet, where it was completed as a gas well, to 7956 feet and perforated casing from 7780 to 7796 feet. On a drill stem the well showed 400-pound working pressure. The drill stem test showed a 900-pound pressure and a spray of oil. The test was made through a quarter-inch choke on top and bottom.

Humble Oil & Refining Company has made location for Thomas 1, 2200 feet south and 2200 feet west of the NEc of N2 of section 11-9s-4w, or west offset to M. Kratzer 1.

It is reported that two Shreveport, Louisiana, operators have leased from Freeland Brothers of Crowley, the mineral rights on the canal in the north part of the Roanoke field, and in the section 1 and 2-9s-4w. The operators got the leases for drilling a well and the Freeland Brothers are to guarantee the mineral rights. If these operators are successful in drilling of the well it will make the first operator in the field besides Humble Oil & Refining Company and Shell Petroleum Corporation.

The hot spot for leasing in Jefferson Davis Parish continues to be around the old Welch field with several of the major oil companies taking all the scattered leases through that area.

Two Rodessa Outpost Tests Set Casing

Shreveport, La.—Seven-inch casing was cemented last week in two outpost tests in the Rodessa gas field, northwest Caddo Parish, North Louisiana's deepest field, whose producing horizon is the oolitic lime of Glen Rose age at 5500-5850 feet.

Casing was cemented at 5501 feet in Arkansas-Louisiana Gas Company's Rodessa Oil and Land Company 2, Section 23-23n-16w, a half-mile northeast of production. One half-mile northwest of production United Gas Public Service Company cemented casing at 5540 feet in Foscue 1, center SW SW 28-23n-16w.

Monroe, La.—The semi-annual regauge of the Monroe gas field will be started Monday, April 1, by the minerals division of the Louisiana Conservation Commission. The Monroe and Richland fields are re-gauged each spring and autumn and the withdrawal allowables for the next six months are based on the re-gauge figures.

North Louisiana Lease Deals Involve Drilling

Shreveport, La.—Location for a 4500-foot test on a 20,000-acre block taken recently from George Shaw of Homer, Louisiana, who has 150,000 acres in holdings in Madison Parish, northeast Louisiana, was made last week by Southern Land and Exploration Company of Tyler, Texas. This location is the second made in the last three weeks in this parish which is in the northeast part of the state and has had only three tests drilled for oil or gas. The new location is Deltic Investment Company 1, NW NW 1-17n-12e.

Several drilling obligations are included in recent acreage transfers of Caddo Parish land. C. H. Seybert and associates have assigned SW NE Section 17-20n-15w, in the Pine Island field, for a drilling operation. Atlanta & Shreveport Oil & Gas Company has assigned to W. M. Sanders E½ NW Section 2-20n-16w, the operator to drill seven wells.

C. M. Dickson has leased to Leonard Company a block of acreage in Sections 31 and 36-21n-15w, the Sam Perry fee, for the drilling of a well.

Magnolia Petroleum Company has assigned to United Gas Public Service Company 78 acres in Section 8-18n-16w. In the Rodessa gas area M. L. Harris has leased to United Gas Public Service Company W½ NE NE SE and SW SE 10-23n-16w, and N½ NE SW 15-23n-16w, for $3000.

Catahoula Parish Test Blows Out

Shreveport, La.—J. Phillipi and associates of New Orleans, recently took over an abandoned test of Robinson and Greer in Catahoula Parish, east central Louisiana "in the trend", and while cleaning out hole at 936 feet the well blew out making a large amount of gas variously estimated at five to 20 million cubic feet daily. The well later was blowing out of control. It is Louisiana Central Lumber Company 1, NW SE 2-9n-6e.

This test had been drilled to 3016 before being abandoned, several months ago. While being first drilled the well suddenly blew out at 2742 feet near base of the Sparta and near top of the Cane River. Where the gas was originating was undetermined but it was killed and 6⅝-inch casing was cemented at 2738 feet. When bailed it showed nothing at that horizon and was deepened to 3016 feet in Wilcox where salt water appeared.

The casing was shot several times, the last time about 916 feet which was contact of the Jackson and Cockfield. At this depth it was recalled a core had shown considerable gas. The well was then plugged and abandoned.

This was the third of a series of tests drilled by Robinson and Greer and one of the previous tests had acted in a manner somewhat similar to the last test.

North Louisiana Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
CADDO PARISH—(Blanchard)—		
Louanna O&G Co, W. H. Lindsey 1, sw se 35-19n-16w	*	928
CADDO PARISH—(Pine Island)—		
V. & F. Oil Co, Etchinson 2, nw ne ne 16-20n-15w	40	2203
DE SOTO PARISH—(Naborton)—		
Ben F. Smith, Bessie V. Bonds 1, sw sw 23-12n-11w	*	2797
LA SALLE PARISH—(Urania)—		
F. A. Trichel, Urania Lbr. Co. 1, se se 3-9n-1e	†	1491

*Failures; †Junked; ¶Mil. cu. ft. gas.

Block Taken in St. Tammany Parish

Slidell, La.—Joe Danciger has assembled a 7000-acre block in St. Tammany Parish, just northeast of Slidell, and placed the leases in escrow in a local bank. The leases carry a six months exploration clause with a drilling obligation by the expiration of the next sixty days. If the exploration work is satisfactory a 6000-foot test is contemplated.

The block is located in townships 8 and 9 south, ranges 14 and 15 east. Shell Petroleum Corporation once had leases in this area which was surveyed by seismograph.

Arkansas Conservation Officials Reappointed

El Dorado, Ark.—All members of the Arkansas Board of Conservation, as well as agents for the board, last week were re-appointed for a two-year term by Governor J. M. Futrell of Arkansas. Headquarters of the board are in El Dorado.

Members of the board are: J. S. Brooks, M. E. Wilson, O. G. Murphy, Ed Hollyfield, all of El Dorado, and J. D. Reynolds of Camden. Brooks has been serving as chairman.

C. E. Harris was named chief conservation agent for his fifth term having been appointed by Governor Martineau and twice re-appointed by Governor Parnell, the present re-appointment being his second by Governor Futrell. He is entering his ninth year in the position.

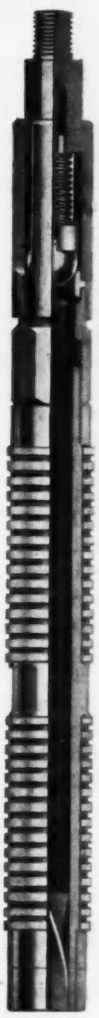
E. N. Denton and A. H. Stoltz were re-appointed assistant agents to Harris and Miss Jessie Ruth Benton was re-appointed secretary of the board.

One Small Oil Well In North Louisiana

Shreveport, La.—Four completions were reported in North Louisiana last week, only one of which was a commercial well, this being a 40-barrel daily pumper in the northeast part of the old Pine Island field, Caddo Parish.

A test two miles northeast of production in the shallow Blanchard gas field, Caddo Parish, was abandoned as a salt water hole at 928 feet in Nacatosh which is the main producing horizon at Blanchard.

SAND WELLS



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Arkansas Development Work at Low Ebb

El Dorado, Ark.—With offsets to the north, south and west failures in the Nacatosh sand at 1300-1400 feet, T. J. Gaughan and associates who several months ago completed a small commerical oil well at 1394 feet in that horizon, last week spudded an east offset to the producer, the new test being M. Bragg 3, located 330 feet north and 50 feet east SWc NE SE 25-13-18, Ouachita County, Camden district. Ten-inch surface casing was cemented at 81 feet. These operators have a 4700-acre block.

This was Arkansas' only new location. C. J. Hodges and associates of Beverly Hills, California, who recently took over Beverly Oil Company's 3,000-acre block and the derrick at the location for Commercial National Bank 1, NE SE 30-17-28, Miller County, are preparing to move in rig.

Ira Gee and associates have abandoned location for Scott 1, NW SW NW 23-10-22, a wildcat location in Nevada County.

Arkansas had only one completion last week, a wildcat in Miller County which has been shut down for several months with hole bottomed at 3177 feet after a reported oil show. This test is seven miles west and slightly north of the Garland City field and was drilled by Fitzwater and associates as Norsen 1, SEc SW SW 29-15s-17w.

Joe Modisett and associates' Ward 1, SE NW 6-18-13, a wildcat three miles west of the Urbana oil field, Union County, completed the preceding week as an estimated eight million to 10 million-foot gasser, with an estimated 1100 pounds rock pressure, at 2563 feet in Buck Range sand (Ozan), was gauged last week as a 3,500,000 cubic foot gasser with 960 pounds rock pressure.

J. C. Strahan whose Hardin 1, NW NW 18-2s-7w, Lonoke County, was reported last week as abandoned as a junked hole at 2285 feet, announces the test has not been abandoned but that he has a fishing job at 2323 feet.

Deep Rainbow City Test Sets Casing

El Dorado, Ark.—H. L. Hunt, Incorporated, drilling a 7000-foot test in the Rainbow City field, Union County, Arkansas, last week were preparing to set a string of casing after coring anhydrite and red shale from 5796 to 5868 feet. Paleontological determinations are being made to determine the age as Trinity or Permian, the theory having been advanced by some that the anhydrite and red beds are similar to these formations in the Permian of West Texas.

Arkansas Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MILLER COUNTY—		
Fitzwater et al, Norsen 1, se sw sw 20-15s-27w	*	3177

*Failures; †Junked; ¶Mil. cu. ft. gas.

Florida Test Sets Surface Pipe String

Miami, Florida. — Oil Development Company of Florida has set, cemented and drilled plug on 132 feet of 16-inch surface at its South Lake 2, located in the SE SE 17-24s-25e. The well was spudded March 19. It had 40 feet of citronelle sands, followed by 50 feet of sand stones, sand limes and shell beds of Hawthorne age. The Ocala (Jackson) was reached 90 feet below the surface, which is approximately 20 feet above sea level.

Alabama to Get A 6000-Foot Test

Mobile, Ala.—Wilkins and Willis of St. Paul, Minnesota, have recently assembled a large wildcat block in Greene County, Alabama, near Eutaw and are reported contemplating a 6000-foot test. They have secured a rig from E. R. Owen, Jackson, Mississippi, contractor.

West of Bay Minette, county seat of Baldwin County, Alabama, McDavid and associates are assembling a wildcat block. Mrs. Mamie McCurry of El Dorado recently assembled a block east of this town in the same county.

Mississippi-Alabama Tests Are Abandoned

Jackson, Miss.—Mississippi and Alabama each had a wildcat failure last week and Mississippi had two new locations.

Coming as a distinct disappointment, Pelican Oil & Gasoline Company's (A. C. Glassell et al) Martin G. Bender 1, NW NW 11-12n-8w, Issaquena County, Mississippi, was abandoned after it showed 24 fourbles of salt water in 20 minutes when formation tester was run. Total depth of the hole is 3227 feet in red shale but the hole had been plugged back to 3155 feet. Seven-inch casing had been cemented at 3079 fet, top of the Monroe gas rock; elevation is 105 feet. A gas show had been reported.

This test had been shut down for some time while titles on the original 40,000-acre block on which it is located had been cured and while aditional acreage had been secured. United Gas Public Service Company owns a large interest in the block.

In Baldwin County, Alabama, Danciger Oil & Refining Company's United States Government 1, NW NW 1-9s-1e, (parcel 2, Fort Morgan Reservation, 536-acre tract), was abandoned as a dry hole at 2564 feet.

In Clarke County, east central Mississippi, exactly a half-mile east and one degree north of a test drilled in 1931 by Gulf Refining Company which had an oil show in Eutaw sand at 3692-3700 feet, L. Beckwith and associates are moving in materials for Long-Bell Lumber Company 1, NEc SW SE 10-2n-16e. This test will be drilled to the Selma chalk and if it is checking higher than in the Gulf well it will be continued to the Eutaw. This block was recently assembled by L. B. Mawk.

Mississippi's other location is a half-mile east of gas production in the southeast part of the Jackson gas field in Rankin County, and is Cleve Love and associates' Baehle 1, NEc NW NE 18-5n-2e.

Mississippi Leasing Continues Active

Jackson, Miss.—Bryant A. Fehlman of Crowley, Louisiana, has assembled over 15,000 acres in a wildcat block in townships 8 and 9 and ranges 5 and 6 west, Wayne County, southeast Mississippi, near Waynesboro, for an early test. Eastman-Gardiner Lumber Company of Laurel, Mississippi, has assigned him 6000 acres for the block.

In the northwestern part of Lamar County, south Mississippi, The Texas Company is buying some scattered leases.

In Stone County, south Mississippi, Gulf Refining Company has a seismograph crew working over acreage in townships 3 and 4 south, ranges 10, 11 and 12 west. Three magnetometer operators are also working in this section for the same company.

A torsion balance crew employed by Ohio Oil Company recently finished work in the Mississippi Delta section, in Issaquena, Sharkey and Washington Counties.

Southeastern States Completions

ALABAMA

Company, Well and Location	Init. Prod. Bbls.	Depth
BALDWIN COUNTY—		
Danciger O&R Co, U. S. Government 1, nw nw 1-9s-1e (Parcel 2, Ft. Morgan Reservation, 936-ac)	*	2564
MISSISSIPPI		
ISSAQUENA COUNTY—		
Pelican O&G Co, Inc, Bender 1, nw nw 11-12n-8w	*	3227

*Failures; †Junked; ¶Mil. cu. ft. gas.

Cooper Wild Gasser Defying Relief Well Control Effort

Hobbs, New Mexico.—Flooding of 3300-foot lime horizon in Humble Oil & Refining Company et al's J. L. Coates 1, C NW NE Section 10-24s-36e, a north outpost location for the Cooper field, by means of an offset relief well to try and drown a junked gasser had not met with success late last week. In contrast to prompt results attained within the past year in killing cratered producers in the Conroe field and in Jim Wells County, Texas, with relief wells, the Cooper area gasser has been slow in yielding water pumped into the lime because of unusually tight and hard formation.

Situated 400 feet due west of the gasser, Humble Oil & Refining Company's relief well was started February 8 after all other practical means of killing the junked producer had failed. A string of 8⅝-inch casing was cemented at 1360 feet, or 73 feet above the first salt section. The last string of pipe, consisting of 6⅝-inch, was cemented at 2973 feet, or immediately below the salt section. The hole was drilled to about 3395 feet before attempting to flood the gas zone.

Coates 1 has been out of control since early last October, with the hole bottomed in gas pay at 3355 feet, or 3370 feet. Gas production estimated in excess of 50,000,000 cubic feet broke through while the rotary crew was preparing to core, followed by a collapse of the 9⅝-inch casing cemented at 2999 feet. Parting of the casing diverted the gas production outside the surface pipe when the well was closed in, resulting in numerous small craters forming around the well. Appearance of carbon dioxide gas along with the regular petroleum gas further complicated the situation. The hole is considered hopelessly junked, but is in such condition that it can not be properly plugged until the gas flow can be lubricated off by the relief well.

Immediate drilling of a north offset to the discovery well of the Monument field, and two wildcats for eastern Lea County were announced the past week. Amerada Petroleum Corporation, discoverer of the Monument oil area, has made location for State 1-F, C SW SW Section 36-19s-36e, and will draw upon the completed well, which has been shut in after filling available tankage, for fuel. Amon G. Carter, Fort Worth publisher, has acquired government permit acreage from Continental Oil Company and The California Company, centering about five miles northeast of the Cooper field, and has moved in machine to start G. H. Mattix 1, C SE NW Section 3-24s-37e. Acreage spreads are being offered majors at $30 per acre around this wildcat. Rowan Drilling Company and Neville G. Penrose, Fort Worth, also procured government permit acreage from the above companies, and have moved in rig to drill three miles southwest of the town of Eunice, about three miles due east of two tests completed by Ohio Oil Company as gassers after showing considerable oil. Their location is on the E. M. Elliott permit, C NE SW Section 17-22s-37e.

Preliminary gauge given Repollo Oil Company's Gloyd 2, NWc SE¼ 12-25s-36e, northeast section of the North Jal field, indicated a flow of 138 barrels of fluid, including 15 percent oil, after treating lime at 3325 feet with acid. The well ceased flowing after cleaning itself. It has a sub-sea depth of 146 feet, normally a safe distance above the water zone. Further testing was deferred pending arrival from Fort Worth of Glen Harroun.

Hobbs, New Mexico.—Production in the Hobbs field was extended deeper into the townsite area the past week when Noble & Company's Hobbs 1, situated NWc SE Section 34-18s-38e, earned a potential open flow rating of 19,152 barrels after twice treating the porous lime horizon with acid. The hole was drilled to 4215 feet, or 589 feet below sea level.

The fact that the well is on the east brink of the structure may account for its unusual production performance, as nearby wells to the west were smaller.

Nearby structures were sprayed with oil when the gas separator failed to accommodate the production when first gauge was attempted.

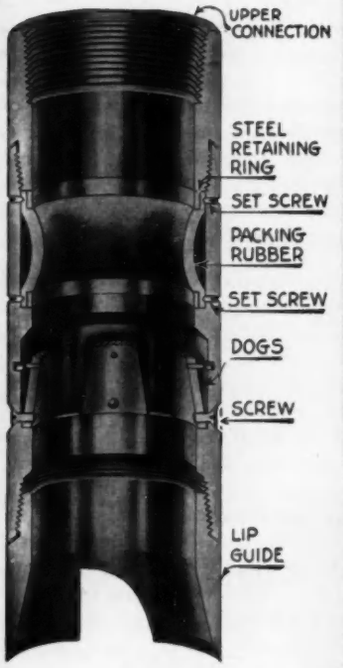
Byron Structure Well Showing; Two New Starts

Lovell, Wyo.—Closure to the fault block area of the Byron proved oil structure in Big Horn County northern Wyoming has apparently been definitely established by Peay Oil Company's (formerly Crosby & Huntington Syndicate) test two miles south of the nearest Byron production. The well, Denio 1, Tract 43-C, Section 15-55n-97w, is showing for 30 to 40 barrels daily as a result of swabbing, and is going on the pump for a 10-day production test. Bottom is at 3440 feet and will be deepened a few feet before testing.

Ohio Oil Company is building road to its new Byron location, Sidon Canal 2, southwest corner Lot 40, Section 24-56n-97w. Taylor Oil Company's Hos-

Don't Wait

until the fish has time to get stuck, resulting in a long-drawn-out, costly fishing job and possibly loss of the entire investment in the well.



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kins 1, SE SE 25-26n-97w, is fishing drill stem with hole bottomed at 5275 feet.

Garland Oil Company's Government 2, SE NE NW Section 14-56n-98w, in the north fault block area of the Garland field, Park County, just across the line separating Park and Big Horn counties, is fishing for cable tools with hole bottomed at 2165 feet. The objective, the Peay sand, Frontier series, is expected at 2300 feet. If production is not encountered in the Peay, the test will deepen to explore the Madison lime.

The Texas Company's Sonners 3, E½ NE NW Section 29-51n-100w, is a first report in the Oregon Basin oil and gas field, Park County, and is moving in rotary. Ohio Oil Company's Oregon Basin Oil & Gas Company 1, SW NW Section 5-51n-100w, is waiting on cement to set around the 8⅝-inch casing at 1291 feet with hole bottomed at 1330 feet.

Cut Bank

Cut Bank, Mont.—The Texas Company released its first location for its 1935 drilling campaign in the Cut Bank field, Glacier County, Mont., this week when it staked location for Hinkle 6, NEc Section 2-34n-6w.

First et al's Danen 1, Lot 10, Block 11, Section 12-33n-6w, a town lot well, which showed for 10 barrels at 3005 feet deepened to the Madison at 3160 feet and had a hole full of sulphur water at the Ellis-Madison contact at 3150 feet. It is plugging back and may be abandoned.

Montana Power Gas Company's O'Brien 1, CSE SE 31-34n-5w, which swabbed 236 barrels initial a week ago, pumped an average 135 barrels daily in a four-day production test. The hole bottoms at 2780 feet.

Mountain States Completions

NEW MEXICO

Company, Well and Location	Init. Prod. Bbls.	Depth
LEA COUNTY (Eunice Field)—		
Peerless O&G Co., State 1, c nw sw 29-1s-36e	75	3974
SAN JUAN COUNTY—		
Fred Mendenhall, Test 1 ne nw 21-29n-11w	*	300

MONTANA

GLACIER COUNTY (Cut Bank Field)—		
Olive Oil Co., Winkler 3 nw ne 35-35n-6w	75	2804

WYOMING

PARK COUNTY—		
Rocky Mountain Gas Co., Oregon Basin Oil & Gas Co 1 sw nw 5-51n-100w	¶1	1330

*Failures; †Junked; ¶Million cu. ft. gas.

Public Land States Asking Change in U.S. Leasing Law

Casper, Wyo.—A two-year extension on existing oil and gas permits, a reduction and limitation of government royalty oil, and preference for permit application to prospectors carrying on costly geophysical surveys on the public domain are the important changes urged by the Rocky Mountain Oil & Gas Association in the O'Mahoney-Greever joint bill to amend the general Oil & Gas Leasing Act of February 25, 1920.

The amendment bill is now up for public hearings in the Senate Public Land Committee, and Harry H. Scwartz of Casper is in Washington to present the proposed changes in the bill to the committee.

Two thousand printed copies of the changes were released from publication at Casper Monday and are being distributed to congressmen and governors of the eleven western public land states, to department heads in Washington, and to interested parties. More than 1000 requests have been received at the office of the Rocky Mountain association for copies of the changes.

Changes suggested in the amendment bill are briefly as follows:

1. Extend the expiration date of existing permits until July 1, 1937, instead of July 1, 1935.

2. Limit federal royalty on oil and gas to 7½ percent instead of 12 percent in the provision that permits may be exchanged for lease prior to discovery.

3. Give the permittee the right to select preferred acreage instead of the secretary of the interior.

4. Limit government royalty outside of "A" Lease to 25 percent.

5. Clearly define wildcat acreage from proved field acreage, and allow the first applicant to file on permit on wildcat acreage, instead of putting wildcat acreage up for competitive bidding.

6. Would not make annual rental payment of 25 cents an acre in force until after permittee has held permit two years.

7. Allow the permittee to file on as many 640 acres as he feels necessary to cover the geological structure, instead of limiting him to one 460-acre tract.

8. Provide that the secretary of the interior may grant a license of three months duration for a prospector to carry on geophysical exploration on federal land of an area of not more than six square miles, guaranteeing the prospector the first right of filing permits on any land in the area.

9. Would strike out all sections in the amendment bill in regard to pipe line right of way to allow the old act to stand as is.

The changes for the bill were drafted by a committee appointed at a meeting open to the public of the Rocky Mountain Oil & Gas Association in Casper March 6 and 7. Committee members are R. P. Jackson, secretary of the Montana Oil Conservation Board, of Great Falls; Frank H. Gower of the legal department of The Texas Company, Denver; Former Congressman C. E. Winter, attorney and public land expert; Harold H. Healy, attorney for Ohio Oil Company; C. E. (Buck) Warner, land department of Stanolind Oil & Gas Company, and Sidney J. Kent, of the Consolidated Royalty Oil Company, all of Casper.

Third Sundance Sand Tested at Lance Creek

Casper, Wyo.—Ohio Oil Company's Agness Rohlff 2, NE SE 32-35n-65w, gauged 135 barrels an hour on a drill stem test in the third bench of Sundance sand, and is waiting on cement to set around the 7⅝-inch production string at 3645 feet on top of the Sundance. The hole bottoms at 3901 feet. The well is the first in the Lance Creek field, Niobrara County, eastern Wyoming to test the third bench of the Sundance sand. It was in this stratum that the prolific production in the Salt Creek field was developed.

Ohio Oil Company is preparing to drill Lamb 2, NE NW NE 5-35n-65w, to Sundance, and has made location for a Lance Creek well in CSE SE 32-36n-65w. Lamb 2 was completed at 3932-42 feet in the Muddy sand for 160 barrels flowing production in 1928.

Buck Creek Oil Company, subsidiary of Continental Oil Company, is drilling the Lakota at 3520 feet in Apex 1-A-3, SW NE SW 34-36n-65w, an old Lance Creek well deepening.

Los Angeles.—The recently reorganized Oil Producers Agency of California has opened a San Joaquin Valley office in the Haberfelde Building in Bakersfield, with R. L. Patterson in charge.

Strike of Crews on Tankers Gets Worse

Los Angeles.—Due to the strike of the crews, approximately 30 tankers are idle on the West Coast and there is some danger that the strike will spread to other cargo vessels. The strike was called March 9 without any notice to tanker owners, and negotiations for a week or more ended when operators of the tankers gave public notice that no further negotiations would be held. As the tankers arrived at home ports, the crews walked out.

Standard Oil Company of California is little affected, since it has been operating under an agreement with the Standard Marine Employes Association, composed of both officers and crews on all company tankers, but the company announced its accord with the statement issued by the other companies, as follows: Associated Oil Company, General Petroleum Corporation, Richfield Oil Company, Union Oil Company and Hillsone Steamship Company. The Texas Company of California operates no tankers.

Shipments of gasoline are being forwarded to points in Oregon and Washington in railroad tank cars from the San Francisco area. The movement of petroleum products up and down the California Coast has not been affected.

Due to the laying up of the tankers, daily production of crude oil at Ventura Avenue has been cut about 11,000 barrels a day, as some of this oil had been moved by tankers from sea loading stations. Certain other ocean front oil fields may be slightly affected if tankers are not soon placed in operation.

The statement to the press by the oil companies affected was in the form of a letter to the union, as follows:

"Because of your action on March 9, 1935, without any notice whatsoever to us in calling a strike on all tankers in the midst of negotiations with you, in spite of the owner's offer to submit all controverted matters tc arbitration without limitation, you are hereby notified that all proposals, suggestions and offers made by us, including offers to arbitrate, are withdrawn and that all negotiations between us are now terminated."

The statement gave a history of negotiations since July, 1934, reviewing the history of the vote of 1689 employes when only 519 favored being represented by International Seamen's Union, the organization which called the strike.

Vessels flying foreign flags have no part in the dispute.

California Drilling Ahead of Last Year

Los Angeles.—Only eight notices of new wells to be started in California were filed week ending March 16, and of this number Los Angeles Basin drew only one, which was listed for Long Beach.

So far this year, 172 new wells have been started in the state, compared with 109 for the same date last year. Also deepening or redrilling jobs to March 16 this year in the state totals 178, against only 116 at same date the previous year.

There is considerable new activity in the state, but the field work is largely north of the Los Angeles Basin, in the heavy oil territory, with Long Beach being the only field in the Basin showing marked activity.

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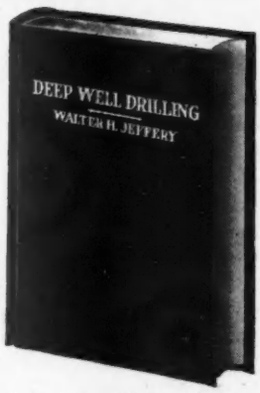

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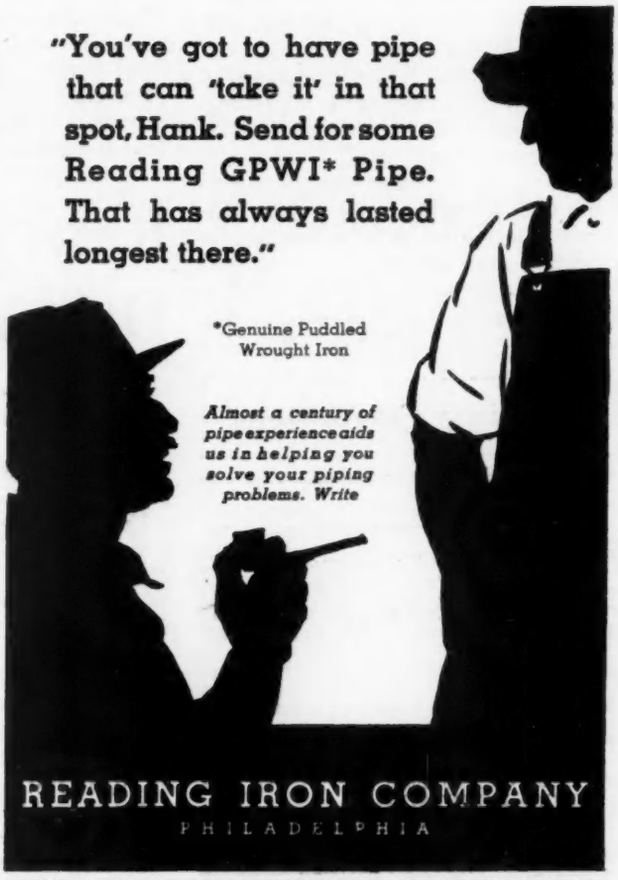

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Big Well Completed In Playa Del Rey Area

Los Angeles.—The Playa del Rey area of the Venice field, within the city limits of Los Angeles, is becoming more active as each week passes. At a recent survey, it was found that 14 wells were drilling, two were rigging up and there were two locations spotted.

Mammoth Oil Company's No. 1, reported to be good for 4000 barrels at 6344 feet, made slightly better than 8800 barrels when given a potential test. The Dunlap well, previously placed on a potential test, flowed at a rate of 9111 barrels its best day. The oil as it comes from the well has a high temperature, and official figures are corrected for temperature.

Big Ben Oil Company's No. 1, with bottom at 6820 feet, is being plugged back for a redrilling job, since it has been found that the hole drifted a considerable distance from vertical. This company has turned its lease to Petrol Corporation for further drilling and it is understood Petrol will drill several wells.

Wilshire Oil Company has secured an 18 acre lease on University Heights, near the Playa del Rey activity and will drill several wells.

Chas. W. Fourl, who drilled the discovery for the new area, is getting ready to start his fourth well for the field, about midway between his No. 1 and No. 2 almost offsetting the Mammoth 8800 barrel producer. Fourl's No. 3 with old bottom at 6411 feet is now redrilling at 5960 feet.

W. J. Williams and Charles Hopper, who helped to supervise the drilling of the discovery well, have secured a one well lease near Manchester Boulevard and will start drilling about April 1.

D. W. Elliott's Del Rey 1 with bottom at 6285 feet started flowing March 22 at 1200 barrel rate, but new wells in this new Venice extension are brought in very carefully and their first day's production sometimes does not mean very much. It may be another 8000 barrel producer.

Union Oil Company is now drilling at three holes and one of them may be completed in the next 10 days.

Association Formed By 80 Independents

Los Angeles.—Close to 80 independent operators at Long Beach, Huntington Beach, Venice, Santa Fe Springs, etc., have formed the California Oil Producers Association with Jas. W. Wood as president and E. J. Walsh as secretary. A recent meeting was held at Long Beach where Harley Burks and Wm. J. Kunnitzer made addresses.

A "crooked hole" bill is now being considered by the California legislature and as written is not approved by the independent operators, and this subject consumed most of the time of the Long Beach meeting.

Secretary Walsh has been sent to Sacramento, state capitol, to assist George Settle, attorney, in the preparation of a proposed law to levy a removal tax on stored oil.

The new association plans to present the side of the independent producer at all times and places where oil legislation or regulation is proposed.

Producers Will Fight Method of Assessment

Los Angeles.—Decision has been reached by San Joaquin Valley Producers Association to conduct an educational campaign over the radio and otherwise to bring about a change in the method of assessing oil properties in Kern County.

The association favors valuations according to what the lands are producing rather than what the wells could produce or any arbitrary method. The association had such an object when organized last year, but it was too late to accomplish much in the way of lowering taxes for 1934 or 1935.

Wells Drilling in Old Huntington Beach Area

Los Angeles.—Interest in the Garfield area in the old Huntington Beach field has increased with completion and re-completion of several fair wells in recent weeks. Union Oil Company will drill two new holes and Associated Oil Company will drill one. Standard Oil Company also controls acreage in the area.

Stevco Oil Company's No. 1 was recently completed for 300 barrels of 24.6 gravity oil at 3843 feet with casing cemented at 3500 feet.

California Completions

Company, well and location	Initial Prod Bbls.	Depth
DOMINGUEZ—		
Shell Oil Co., Reyes 64	1250	4690
LONG BEACH—		
D.W.M. Corp., No. 1	325	4315
Geneva-Marie Oil Co., No. 1	385	4210
Younkers & Crumwell, No. 1	325	4625
WEST COYOTE—		
Standard Oil Co., M.C. 120	1415	6000
EDISON—		
Shell Oil Co's Duff 5	100	3917
MIDWAY—		
Pan-American Pet. Co-Buena Fe..	120	676
MOUNTAIN VIEW—		
The Texas Co., Schamblin 1	¶3	5325
ROUND MOUNTAIN—		
Honolulu Oil Corp. No. 57	1210	2007
DEVIL'S DEN—		
Richfield Oil Co., Alferitz 2	150	2506

*Failures; †Junked; ¶Million cu. ft. gas.

Kettleman Hills Tests Drilling At Advanced Depths

Los Angeles.—Out of the 25 drilling wells at Kettleman Hills, North Dome, eight are below 8000 feet, 15 are below 7000 feet. There should be several completions in the next 60 days.

Union Oil Company's North Kettleman Oil & Gas Co. test in Section 24-21-16, with old bottom at 10,944 feet, has cemented whipstock at 6796 feet, and will redrill in an attempt to reach the old depth where a good looking oil sand was cored.

Kettleman North Dome Association's No. 56-8Q, Section 8-22-18, is redrilling at 8924 feet with old bottom at 10,154 feet.

Petroleum Securities Company's Felix 4, in Section 35-21-17, drilled to 8285 feet and is preparing to run 6⅝ inch liner preparatory to a production test. String of 9⅝-inch is cemented at 7546 feet.

Standard Oil Company started two new holes early in March and a third probably will be started before the end of the month. Associated Oil Company's Whepley 5 cemented 8⅝-inch at 8173 feet with bottom at 8387 feet and should be ready shortly for a production test.

In the Middle Dome, Standard Oil Company's No. 87-29V, Section 29-23-19, is drilling in gray sand and shale at 4986 feet and 16-inch is cemented at 3395 feet.

It is reported that several edge or semi-wildcat holes are to be drilled at Kettleman Hills this year, to test acreage fringing the proven area.

Devil's Den Semi Wildcat Producing

Los Angeles.—Richfield Oil Company's Alferitz 2, Section 14-25-18, semi-wildcat in the Devil's Den area of Kern County, has been completed for 150 barrels of 18.5 gravity oil, cut 18 percent, with bottom at 2506 feet.

In this hole, 8⅝-inch casing was cemented at 1695 feet and 831 feet of 6⅝-inch liner, including 805 feet of perforated, was landed at 2500 feet. The well is pumping.

California Deep Test Has Fishing Job

Los Angeles.—Standard Oil Company's McPhail 1-A, 36-27-20, in the North Belridge field, stopped drilling at 8385 feet and will cement 9⅝-inch on bottom. Run of tester showed no water and this well should be the next completion in the deep zone in this field.

Early in the month, Belridge Oil Company completed two good wells in the deep zone and is now rigging rotary to start drilling No. 32-35, Section 35-27-20, and location has been staked for No. 33-35 in the same section.

General Petroleum Corporation's Berry 1, which held the title of the deepest hole in the world before Gulf Production Company's Texas well went deeper, redrilled to 9528 feet and is now fishing. Old bottom is at 11,377 feet.

Standard Oil Company's McPhail 2, in Section 36-27-20, is drilling in hard brown shale at 5819 feet with 11¾-inch cemented at 5470 feet.

Will Drill Wildcat In Topanga Canyon

Los Angeles.—Monarch Oil Corporation of Los Angeles, Calif., has purchased 12½ acres of land at Sylvia Park, Topanga Canyon, Los Angeles County, and an 84-foot derrick has been erected. Drilling is to start about April 1. It is expected that a well at least 4600 feet will be drilled, although a deeper hole will be drilled if necessary and if production is not found at a lesser depth.

Deep Production Found In Central Michigan

Mt. Pleasant, Mich.—J. W. Leonard's Durbin 1, 10n-5w-11, Montcalm County deep test, when deepened from 3197 feet to 3199 feet flowed out of control with an estimated daily production between 3000 and 10,000 barrels daily.

It was shut in Friday after blowing wild for 24 hours and was to be tested over the week end if storage was available. Six 500-barrel tanks were under construction.

Originally drilled in a week ago, the test showed 1500 feet of oil in the casing and swabbed 60 barrels over a five-day period.

When deepened the oil saver was blown out and without a master gate it flowed wild, the only accurate gauge was the first 12 minutes when it put 60 barrels in the only tank on the lease.

The Leonard test appears to have opened a prolific new reserve in Michigan. It was the first deep test to show commercially in Montcalm County. Production is from Dundee lime.

At the same time the Leonard-Durbin well was causing a stir among Michigan operators, the reverse English resulted on the same day when Roosevelt Oil Company's Haviland 1, 17n-2w-4, Gladwin County, announced abandonment after picking up water at 4029 feet. Dundee was topped at 3915 feet with elevation of 740 feet.

The Roosevelt wildcat was the first test in the Gladwin County area completed since October, 1934, when M. F. Whitehill's Kintner 1, 17n-2w-11, was completed at 3886 feet with a 75-barrel initial. The Roosevelt test was located two miles northwest.

Possibility of an extension of the Rosebush field (Isabella County) loomed March 26 when Wittmer Oil Company's Pollard 2, Section 1, 15n-4w, showed 1000 feet of oil in the casing 13 feet in Dundee lime. Drilling was suspended to build tankage.

Michigan Completions

Company, Well and Location	Init. Prod. Bbls.	Depth
MIDLAND COUNTY—		
McClanahan Oil Co's Brew 3, 13n-1w, nw nw se 20	75	3430
ISABELLA COUNTY—		
Columbia Oil Co, Van Conant 2, 16n-4w, sw sw se 25	¶1¾	1316
Rhode 1, 14n-6w, sw ne 15	¶1¼	1350
GLADWIN COUNTY—		
Roosevelt Oil Co's Haviland 1, 17n-2w, se ne se 4	*	4029

*Failures; †Junked; ¶Million cu. ft. gas.

Carter Oil Company Enters Michigan

Mt. Pleasant, Mich.—H. F. Moses and C. P. Godsey, representatives of the Carter Oil Company, have been stationed here to direct operations.

Lease holdings in Michigan of the Ohio Producing & Refining Company, subsidiary of Standard of New Jersey with Carter, probably will be transferred to the Carter Oil Company, for future development.

It was not announced whether C. P. Erni and Okey Wheeler, Michigan representatives of Ohio Producing & Refining Company, would be transferred.

Eastern States Fields Completions

PENNSYLVANIA

Company, Well and Location	Init. Prod. Bbls.	Depth
WASHINGTON COUNTY—		
Carnegie Nat. Gas Co., R. M. Carons 1	¶	2981
F. I. Moninger 1	*	3052

WEST VIRGINIA

CALHOUN COUNTY—		
W. Bickerstaff & Co., Wm. Cooper 5	2	2430
CABELL COUNTY—		
Brown Gas Co., Floyd L. Bias 2	¶	1425
DODDRIDGE COUNTY		
J. D. Foley & Co., Mary J. Ninear 3	4	....
KANAWHA COUNTY—		
G. L. Cabot Inc., Campbell Creek Coal 1	¶	....
Wirtz Smith & Co., Matheney 1	*	....
PLEASANTS COUNTY—		
Ward & Co., Varner 20	*	1994
RITCHIE COUNTY—		
Devils Hole O. & G. Co., Rutherford Hrs. 2	¶	1910
Clarion O. & G. Co, Marbury 2	*	....
WIRT COUNTY—		
Glen Roberts, Vandevender 1	¶	....
WOOD COUNTY—		
C. S. Reed & Co., Ima Dell Reed 1	*	....

SOUTHEASTERN OHIO

PERRY COUNTY—		
Allegheny Oil Co., Monahan 28	3	....
KNOX COUNTY—		
Upham Gas Co., Butler Mizer 1	*	....
Wiser Oil Co., Thorn King 1	¶	....
WASHINGTON COUNTY—		
Chas. Worth & Co., Morningster 5	*	....
Henry Binegar & Co., Ludlow-Moore 4	¶	....

CENTRAL OHIO

CUYAHOGA COUNTY—		
J. W. Cushing, W. F. Prechtel 2	*	....
LORAIN COUNTY—		
Ohio F. G. Co, J. C. Diedrick 1	¶	....
LICKING COUNTY—		
Armbruster & Stricler, Homer L. Jones 7	¶	722
PORTAGE COUNTY—		
Kenova O. & G. Co., F. C. Halstead 1	*	4263
WAYNE COUNTY—		
Ohio Salt Co., Free 1	*	....
STARK COUNTY—		
East Ohio Gas Co., L. L. Roush 2	¶	680
D. M. Braucher 1	¶	4313
FAIRFIELD COUNTY—		
City Nat. Gas Co., Otto M. Cinder 1	*	2101
GUERNSEY COUNTY—		
Four Leaf O. & G. Co., R. S. Grimes 1	¶	1190

NORTHWESTERN OHIO

HARDIN COUNTY—		
Wm. J. McMahon, Kenton Oil & Gas 2	¶	1323

*Failures; †Junked; ¶Mil. cu. ft. gas.

Drilling Reports on Important Wildcats

CALIFORNIA

KERN COUNTY

ALPAUGH—Trico Oil & Gas Co's No. 4, 3-25-23, rig.

NEAR BELRIDGE — Continental Oil Co's Maylan 1, 7-28-20, bldg road. Foundations.

BUENA VISTA LAKE—Shell Oil Co's B. V. A-1, 9-32-25, dr sandy siltstone 5180 ft.

CALIENTE—Signal Oil & Gas Co's S. P. Land 1, 31-29-30, sd 2290 ft. Woodward Oil Co's Batz 1, 36-29-29, td 176 ft. S. P. Land 2, 31-29-30, bailing sand, scum oil, td 497 ft.

COMANCHE POINT—Comanche Oil Co's No. 1, 15-32-29, sd 4325 ft. To drop from report. Tejon Ridge Oil Co's No. 1, 23-32-29, td 1632 ft. To resume dr.

EDISON—Cara Vel Pet. Corp's No. 1, 19-30-30, sd 1940 ft. H. B. Oil Co's Clemens 1, 6-30-30, sd 635 ft. Mountain View Dev. Corp's Spangler 1, 12-30-28, td 5093 ft 7 in at 4994 ft ran tubing and liner to test.

GOULD HILLS—The Texas Co's Jared How 1, 29-29-21, r and coring 4513 ft.

GREENFIELD — Big McKittrick Oil Co's Houghton 1, 7-21-28, td 3645 ft redr 2820 ft.

KERNELL—Standard Oil Co's Widgeon 1, 1-25-23, ready to spud.

LOST HILLS—Associated Oil Co's Williamson 1, 2-26-20, td 7856 ft to plug and test upper zones. Standard Oil Co's United 1, 2-26-20, dr brown shale 3150 ft.

NEAR MOUNTAIN VIEW — Hogan Pet. Co's Symons 1, 4-31-29, dr gray sand 5885 ft.

PREMIER—Smith-Wendell's No. 1, 2-27-27, rig.

SO. BUTTONWILLOW—Seeple Oil Corp's No. 1, 5-30-24, sd 3730 ft.

SOUTH DOME—Continental Oil Co's Gatchell 28-7, 7-25-20, dr hard sandy shale 3705 ft.

TEMBLOR HILLS—Robt. Foster's No. 1, 2-32-22, dr brown shale 2330 ft.

WHEELER RIDGE—Badger Oil Co.'s El Tejon 1, 31-11-19, td 6229 ft. Redr to 4020 ft. Sd. Reserve Oil & Gas Co's Tejon Ranch 1, 2-10-19, dr green silty shale 3700 ft. Tejon Ranch 2, 12-10-19, core hole to 1754 ft by Hall-Baker. Steel rig to dr deeper.

WEED PATCH — Associated Oil Co's DiGiorgio 1, 3-31-29, sd 5501 ft.

KINGS COUNTY

ALPAUGH—Trico Oil & Gas Co's Magee & Stone 3, 36-24-22, dr sand and shale 3050 ft.

PYRAMID HILLS — General Pet. Corp's Martin 1, 20-24-18, dr shale 515 ft.

MISCELLANEOUS

FRESNO COUNTY—Milham Explor. Co's Oro Loma 1, 12-12-11, rur. Russ Oil Syn's No. 1, 28-12-11, sd 5015 ft.

HUMBOLDT COUNTY—The Texas Co's Eureka 1, 1-3-2, dr sand and shale 4997 ft.

MADERA COUNTY—Pure Oil Co's Chowchilla 1, 7-10-14, td 8375 ft plug 8085 ft sd.

SACRAMENTO COUNTY—Great American Pet Co's Howard 1, 25-2-8, td 2952 ft to set 8⅝-in 2950 ft.

SAN JOAQUIN COUNTY—Amerada Pet. Co's F. D. L. 1, 15-2s-5e, rig.

SUTTER COUNTY—Buttes Oilfields' No. 2, 35-16-1, td 7014 ft, no report.

TEHAMA COUNTY—Northern Counties Pet. Co's Ewers-Mooney 1, 25-24-3, dr hard shale 3195 ft.

TULARE COUNTY—Baker-Grover Co's No. 1-A, 10-23-27, lcn.

SANTA BARBARA COUNTY

GOLETA—Shell Oil Co's Bishop 1, 20-4-28, td 6508 ft. Pulled and ripped 6⅝ in. West Elwood Oil Co's Simonds-Campbell, 9-4-28, dr. hard shale 3260 ft.

LOMPOC—Lompoc Pet. Co's Beauterbaugh 2, 18-7-34, td 2975 ft. Sdtr.

NAPLES—Power & Snow's No. 1, 7-4-29, dr. shale 5890 ft.

ABBREVIATIONS

The following abbreviations, signs, etc., are used in completions and wildcat reports in THE OIL WEEKLY.

* —*dry hole abandoned well.*
‡ —*salt water (completions).*
† —*junked and abandoned.*
¶ —*million feet of gas.*
abd —*abandoned.*
bbls —*barrels.*
br —*building rig.*
b.s. —*basic sediment.*
csg —*casing.*
co —*cleaning out.*
dd —*drilling deeper.*
dk —*derrick.*
dr —*drilling.*
fsg —*fishing.*
ft —*feet.*
hfw —*hole full of water.*
in —*inches.*
lcn —*location.*
m —*milling.*
mim —*moving in materials.*
mit —*moving in tools.*
mot —*milling on tools.*
n, s, e, w, —*north, south, east, west.*
oih —*oil in hole.*
otd —*old total depth.*
owdd —*old well drilling deeper.*
owpb —*old well plugging back.*
pb —*plugged back or plugging back.*
r —*reaming.*
rog —*rig on the ground.*
rur —*rigging up rotary tools.*
rust —*rigging up standard tools.*
sd —*shut down.*
sdtr —*sidetracking.*
sg —*show gas.*
si —*shut in.*
so —*show oil.*
so & g —*show oil and gas.*
spd —*spudding.*
sr —*straight reaming.*
sw —*salt water.*
td —*total depth.*
ur —*underreaming.*
wih —*water in the hole.*
wo —*workover.*
wocs —*waiting on cement to set.*
wosr —*waiting on standard rig.*

SAN LUIS OBISPO COUNTY

CHOLAME—Willett Oil Assn's Jack 2, 10-25-15, td 3560 ft. Swabbed wtr. Sd.

VENTURA COUNTY

BARDSDALE—El Rancho Oil Co's Elkins 1, 9-3-19, td 300 ft. C. O. Union Oil Co's Dryen 1, 12-3-20, lcn.

CONEJO—International Oil Developers' Powell 1, 33-2-20, td 3060 ft. To resume dr.

HOPPER CANYON—Oil Ridge Oil Co's Moran 3, 1-4-19, td 1535 ft. Fsh.

LAS POSAS—Las Posas Pet. Co's Mahan 1, 22-3-20, td 8000 ft. Ran tester, now co.

OJAI—Continental Oil Co's Pirie 1, 12-4-23, td 1836 ft. To drill ahead with rotary.

SANTA PAULA—Edw. M. Lesperance's Boosey 1, 31-4-20, td 600 ft. Rep. engine. J. W. Mosher's No. 1, 22-4-21, td 2300 ft. Fsh.

SANTA SUSANA—American Dr. Co's No. 1-A, 31-3-17, sd 700 ft.

SESPE—Supreme Oil Co's No. 1, 1-4-20, spud March 19.

SHIELLS CANYON—The Texas Co's Shiells 128, 4-3-19, dr. sand and shale 5940 ft.

TORREY CANYON—A. W. Macrate's No. 1, 32-4-18, td 4038 ft. To deepen.

SOUTHERN CALIFORNIA

BREA CANYON—Pressel-Perry-Tull's Baird 1, 30-2-9, dr. hard gray shale 4170 ft.

EL SEGUNDO—Republic Pet. Co's No. 1, 18-3-14, dr. shale 4055 ft.

FAIRVIEW—Explorers Dr. Co's Norris 1, 9-6-10, sd 960 ft.

HERMOSA BEACH—Corniel Oil Corp's No. 1, 31-3-14, td 3900 ft. Co. Aron H. Hoover's Bryant 1, 31-3-14, td 4200 ft. Pumping water, trace of oil.

HUNTINGTON BEACH, on tidelands—Black Eagle Oil Co's No. 1-B, permit 194, 32-5-11, td 4702 ft. Co to 4260 ft. To test shutoff to co to bottom.

MANHATTAN BEACH—Bethlehem Explor. Co's Martin 1, 30-3-14, td 6320 ft. R.

NEWPORT—Si Rubens' No. 1, 14-6-10, td 2574 ft. Rur. to deepen.

PICO—Frontier Oil Co's No. 1, 12-2-12, td 2650 ft. Rep. boilers.

PUENTE—N. O. Shively's Rowland 1, 23-2-10, td 3145 ft. To recement 6⅝ in. 2800 ft.

SAUGUS — International Oil Developers' Powell 1, 34-5-16, td 4339 ft. Tested wet 2005 to 4115 ft. To further test.

TOPANGA CANYON—Monarch Pet. Co's Sylvia Park 1, 5-1-16, rig.

SAN BERNARDINO COUNTY — Great American Pet. Co's Gapco D-1, 18-2-8, td 300 ft. Rep. equip.

SAN DIEGO COUNTY—San Diego Gas & Pet. Corpn's No. 1, 32-18-2, td 6333 ft. 11¾ in. at 4020 ft. Tested 1250 bbls water, some gas and trace of oil. J. J. Stevens' No. 1, 27-18-2, sd 1200 ft.

COLORADO

ADAMS COUNTY—Riddle Pet. Co.'s Baxter 1-C, sw 2-3s-66w, rig completed.

PARK COUNTY—South Park Oil Co.'s State 1, se se sw 16-11s-17w, Hartsel anticline, dr 1250 ft.

NEW MEXICO

BERNALILLO COUNTY — Norrins Realty Co.'s Gallegas Grant 1, cnw nw 19-11n-4e, rig completed and dr water well 435 ft.

CHAVES COUNTY — Warman Oil Trust's Weldon-Hoar 1, nw se 9-14s-25e, Blackdom structure dr brown lime 1580 ft. Los Chaves Dev. Co.'s No. 1, cne 8-8s-23e, dr below 350 ft. Spanish Grants Oil Co.'s Fee 1, se sw 2-8s-23e, dr water well 250 ft.

EDDY COUNTY—Geo. F. Getty Oil Co.'s Andrew Dooley 7, swc nw 24-20s-29e, 6000-ft test, elev 3309 ft, cem 13⅝-in csg 1578 ft.

LEA COUNTY — Anderson-Prichard Oil Corp.'s Brett-Conoco 1, c ne nw 7-20s-37e, Monument area, lcn; Fisher 1, c se ne 8-20s-35e, elev 3690 ft, dr 760 ft. Amerada Pet. Corp.'s State 1-F, c sw sw 36-19s-36e, Monument area, mim. Amon G. Carter et al's G. H. Mattix-Conoco 1, c se nw 3-24s-37e, dk. E. B. Guess et al's C. W. Justis 1, swc nw nw 20-25s-37e, sd 1160 ft. R. H. Henderson et al's P. J. Langley 1, c se se 8-25s-37e, elev 3162 ft, top salt 1205 ft, dr 2390 ft; Russell-Steele 1, c ne nw 24-20s-33e, elev 3627 ft, sr for csg seat, td 3481 ft. Humble's J. L. Coates 1, c nw ne 10-24s-36e, elev 3383 ft, salt 1314-2947 ft, top brown lime 2996 or 2988 ft, jkd gasser, td 3355 ft, sd for relief well to kill; Coates 1-A, elev 3385 ft, top anhydrite 1324 ft, dr 3395 ft; F. M. Saunders 1, c ne ne 4-22s-34e, elev 3641 ft, sg 2425 ft, dr 3710 ft. Maljamar O&G Corp.'s P. Miller 1, c nw sw 23-17s-32e, elev 3992 ft, top salt 955 ft, dr 1250 ft. Nat'l Securities Oil Corp.'s V. Linam 1, nec s½ sw 33-18s-37e, elev 3712 ft, top anhydrite 1580 ft, logged salt 1716-2650 ft, top lime 2956 ft, sd in lime 4402 ft. Repollo Oil Co.-Anderson-Prichard Oil Corp.'s B. W. Arnold 1, swc nw se 6-20s-32e, elev 3567 ft, top anhydrite 1540 ft, top salt 1637 ft, dr 2845 ft. Rowan Drl. Co. & Neville G. Penrose's E. M. Elliott-Conoco 1, c ne sw 17-22s-37e, rig. Shell Pet. Corp.'s State-Endura 1, c se ne 12-21s-35e, elev 3588 ft, top lime 3020 ft, pb from hfw 4404 to 3987 ft, re-treated with 3000 gals acid. The Texas Co.-Amerada & Columbian Carbon Co.'s Parker 1, c nw nw 29-26s-37e, elev 2952 ft, dr 3015 ft. W. L. Todd and The Texas Co.'s Fred Cole 1, c ne ne 35-19s-33e, dr 1895 ft. Sam K. Vierson & Brown's W. D. Robinson 1, c nw se 14-11s-32e, elev 4355 ft, rig.

ROOSEVELT COUNTY—Claudell Development Co.'s Wilmes 1, sw se 21-2s-30e, dr 3630 ft with 2800 ft of water in hole.

SAN JUAN COUNTY — C. E. Barnhart's Test 1, sw sw 27-30n-11w, lcn. Fred Mendenhall's Test 1, ne nw 21-29n-11w, abd 300 ft. Phillips & Healy's Test 2, 34-30n-11w, dr 450 ft.

SAN MIGUEL COUNTY—Cabra Springs O & G Co.'s Pino Mesa 1, sw ne ne 22-12n-22e, sd 3865 ft; West Pino Mesa 2, sw sw sw 31-12n-22e, sd 300 ft.

VALENCIA COUNTY — Western Natural Resources Corporation's De Chavez 2, sw ne 5-6n-1e, trying to land 6⅝-in csg on bottom at 6100 ft.

MONTANA

TOOLE COUNTY—J. H. Hamilton Co.'s Farms 1, ne sw 10-37n-5e, Flat Coulee district, so 2400 ft.

WYOMING

BIG HORN COUNTY—California Explo. Co's Gafner 1, csw sw 4-54n-94w, fsg for rope socket 616 ft. Yale Oil Corp. Blakesley 1, ne ne nw 28-49n-91w, dr 1215 ft. Wyoming O & R Co.'s Frison 1, nw sw nw 14-48n-91w, dr 1100 ft.

CARBON COUNTY—Ohio Oil Co.'s Morris 1, cnw se 6-20n-77w, dr 7297 ft. Ohio Oil Co. and California Co.'s Kyle 1, ne se ne 26-21n-79w, dr 5057 ft in the Morrison shale. Earl W. Reader Inc.'s Whitford 1, sw se se 24-20n-84w, swedge out 10-in csg and rerunning string to bottom at 3595 ft.

FREMONT COUNTY — Mid American Oil Co.'s Government 2, cne sw 14-28n-92w, Sheep Creek structure, dr plug with 6-in production string 2175 ft and deepening from 2211 ft in saturated Embar lime with oil heading up over csg. Wildcat is estimated for 300 bbls daily from present depth. Oil tests 24 degrees gravity.

CONVERSE COUNTY—Chadron-Osage Oil Co.'s Jebel 1, se ne ne 17-32n-69w, dr 250 ft, State 1, sw sw 16-32n-69w, sd 150 ft awaiting completion of Jebel 1 for gas for dr fuel. R. J. Dilger's Government 1, se ne sw 33-31n-72w, dr 1000 ft. John Ackard's Daniels 1, sw sw se 17-32n-71w, dr 2500 ft.

KANSAS

BARTON COUNTY—Lario Oil & aGs Co. et al's Nuss 1, nw sw sw 11-16s-14w, br. D. I. Hall et al's Arnold 1, se se sw 19-18s-15w, mit. Wolf Creek's Kraft 1, sw sw sw 26-16s-11w, dr 1560 ft. Suppes & Witts' Hayes 1, sw sw sw 6-16s-14w, mim. McMarrow & Spencer's Hagen 1, ne ne ne 33-20s-11w, ur 10-in csg 2125 ft. Pryor & Lockhart's Herrington 1, ne ne nw 6-16s-12w, ponds.

BUTLER COUNTY — Hay & Cameron's Johnson 1, nw nw se 16-26s-6e, lcn. Tree & Harwood's Henley 1, sw se ne 7-24s-8e, dr 1100 ft.

CLAY COUNTY—Seidel Brothers' Younken 1-A, cs½ se nw 21-9s-4e, sd 1775 ft.

COWLEY COUNTY—A. McCoy's Brandenburg 1, sw sw se 17-34s-5e, dr 1255 ft. Lloyd, Frost & Study's Weathered 1, sw se se 28-31s-3e, spd and sd. Ostat et al's Eckhardt 1, se se nw 15-35s-6e, spd and sd.

DICKINSON COUNTY—Dutch Oil Co.'s Phillips 1, cne nw 15-15s-1e, sd 2714 ft.

ELK COUNTY—Lee Tiffey et al's Stonebreaker 1-A, se se se 32-28s-11e, sd 1175 ft.

ELLSWORTH COUNTY—Carter Oil Co. et al's Teubner 1, se se nw 26-17s-9w, hfw 3178 ft, running 7-in csg. Pryor & Lockhart et al's Gregory 1, se se se 19-16s-8w, dr 2100 ft. Lario Oil & Gas Co. et al's Wright 1, sw sw ne 17-16s-8w, hfw 1925-28 ft, ur 10-in csg 1994 ft. Lario Oil & Gas Co. et al's Central National Bank 1, se se nw 33-15s-8w, lcn. Lario Oil & Gas Co. et al's State 1, sw sw sw 29-15s-8w, rig.

HARVEY COUNTY—H. H. & S. Oil Co.'s Frizzle 1, ne ne se 31-23s-2w, ponds.

MARION COUNTY—Youker et al's Bernhardt 1, cse nw 7-18s-4e, dr 2325 ft.

McPHERSON COUNTY—Lario Oil & Gas Co.'s Base 1, sw sw sw 22-20s-2w, fsg 3510 ft. Palmer Oil Corp.'s Swenson 1, ne ne sw 11-18s-3w, dr 1930 ft. Brosius et al's Hanson 1, ne ne sw 15-17s-2w, fsg 1108 ft. Shell Pet. Corp.'s Wenger 1, ne ne ne 2-20s-1w, sg 2906-46 ft, Halliburton test. Carey & Miller's Husband 1, se se nw 6-19s-2w, mim. W. C. McBride's Mugler 1, se sw sw 22-20s-3w, dr 1080 ft.

NESS COUNTY—Texas Co. & Gypsy Oil Co.'s Goodman 1, csw sw 21-19s-23w, dr 4955 ft. Phillips Pet. Co.'s Young 1, cnw sw 13-18s-21w, dr 2374 ft. Atlantic Oil Co.'s Mark "A" 1, cse se 28-20s-23w, lcn.

OSAGE COUNTY—Jim Edwards' Deitrick 1, cnw se 21-14s-15e, sd 630 ft.

PAWNEE COUNTY — Atlantic Oil Co.'s Slepake 1, cne ne 15-23s-17w, mim.

RENO COUNTY — Privett Drilling Co.'s Crotts 1, ne nw ne 27-26s-10w (owdd), sso and g 3957 ft, sd 4002 ft. Johnson & Carey et al's Dyck 1, se ne se 35-22s-5w, sd 4070 ft. Bradley's Olmstead 1, sw sw sw 22-22s-7w, mim.

RICE COUNTY—Allison & Fitzwilliams et al's Stumps 1, nw nw sw 4-18s-10w, dr 3100 ft. Foarker-Nickerson et al's Lyon 1, se se ne 27-20s-8w, td 2870 ft. Vickers Pet. Co. et al's Gouldner 1, se ne nw 16-18s-9w, dr 1370 ft. Langston et al's Markle 1, ne ne sw 1-20s-9w, td 3415 ft, comp. Day's Mason 1, nw ne ne 28-21s-7w, rig. Gypsy Oil Co.'s Kessling 1, nw nw sw 10-20s-9w, td 3261 ft, to dd.

ROOKS COUNTY—Stearns-Streeter et al's Hoskins 1, se sw se 34-9s-16w, pumped 25 bbls oil. Smith & Ash's Nelson 1, nw nw ne 27-10s-16w, rig. Tree Oil Co. & Indeiss' Johnson 1, sw sw ne 26-10-19w, rig.

RUSH COUNTY—Lario Oil & Gas Co. & Phillips Pet. Co.'s Benbo 1, nw ne ne 12-17s-19w, dr 3559 ft. Morgan & Flynn et al's Schlegel 1, se se nw 26-17s-16w, td 3178 ft, 1000 ft oih. Boyle & Grossman et al's Yost 1, csw sw 23-17s-18w, mim.

RUSSELL COUNTY—J. Brouk & R. D. Bailey's Cluessner 1, nw nw se 34-15s-12w, ru. Hartman & Blair's Krause 1, ne nw nw 5-15s-15w, hfs, sd 3468 ft. Wolf Creek et al's Penn Mutual 1, sw sw sw 22-15s-15w, ru. Hartman & Blair's Furthmeyer 1, ne ne ne 19-12s-13w, dr 3238 ft. Murphin's Funk 1, sw sw sw 19-12s-13w, dr 2025 ft. Reserve et al's Moore 1, cnw nw sw 15-13s-12w, mim. Hartman & Blair's Hildebrandt 1, nw ne sw 12-14s-14w, dr 640 ft. Vernon & Murphin's Becker 1, ne ne ne 33-15s-14w, rig. Ryan Pet. Co.'s Newbold 1, nw se ne 25-12s-15w, spd.

SALINE COUNTY—Dieter et al's Herrington 1, ne nw se 3-13s-1w, ur 6-in csg 3020 ft.

STRATFORD COUNTY—Lario Oil & Gas Co et al's Tudor Morgan 1, se se nw 23-24s-13w, dr 3056 ft.

SUMNER COUNTY—Tom Palmer's Wentworth 1, nw nw ne 9-35s-2e, fsg 3475 ft. D. J. Wilson et al's Clark 1, csl nw 15-35s-1w, rig. Wakefield et al's Newton 1, se se se 21-30s-2e, rig. Shell Pet Corp's Green 1, se sw nw 3-33s-2e, dr 990 ft.

TREGO COUNTY — Central Commercial Drilling Co's Wagg 1, nw nw se 17-13s-21w, fsg 1600 ft. Jenman Oil Co's Jones 1, se se se 20-12s-23w, cored to 3828 ft and sd. Hansa & Lauck's Lang 1, se se nw 1-14s-21w, cellar.

WOODSON COUNTY—Kite et al's Gorman 1, ne ne nw 18-25s-14e, dr 275 ft.

OKLAHOMA

ATOKA COUNTY—H. F. Potts' Nichols 1, sw sw nw 32-2s-9e, dr 1880 ft. Malernee et al's D. D. O. Land Co 1, cse se 35-2s-13e, sd 3114 ft.

BECKHAM COUNTY—Fred Coogan et al's Shelton 1, sw sw sw 33-10n-25w, dr 2895 ft.

BRYAN COUNTY—C. B. Welch's Collins 1, sw sw nw 19-8s-8e, dr 455 ft. Trio Oil Co's Gilbert 1, se se se 25-8s-7e, sd 212 ft.

CADDO COUNTY—H. W. Lee et al's Stacy Ferrel 1, sw ne ne 3-6n-13w, sd 2003 ft. Denver P & R Co's Noe 1, nw sw sw 34-10n-10w, moving in gas lift equipment, est good for 50 bbls oil daily. Denver P & R Co's Sah-Cam 1, cse se 33-10n-10w, mit. H. W. Lee et al's Horton 1, ne ne ne 9-6n-13w, cellar.

CARTER COUNTY—Carter Oil Co's Humble-Williams 1, sw ne sw 27-2s-3w, cored 4755-66 ft and 4795-4800 ft. Waco Turner's A. F. Munson 1, ne nw ne 35-5s-2w, rur.

CHOCTAW COUNTY—Rhodes et al's Pussumik Savings Bank 1, se se se 1-5s-17e, lcn.

CLEVELAND COUNTY — Sinclair Prairie Oil Co's Franklin Community 1, se nw se 21-10n-2w, dr 4925 ft.

COMANCHE COUNTY — F. F. Stevens' Green 1, se se sw 2-1n-13w, dr 1437 ft. H. W. Baker's Miller 1, se sw se ne 22-2n-13w, sd 120 ft. Henry Rosenthal et al's Au-chi-re-ah 1 "B", nw nw nw 5-1n-9w, td 1493 ft, moved in new mach to bail hfw.

GARFIELD COUNTY—Herdon Drilling Co et al's Allen 1, cne ne sw 35-24n-3w, fsg 4720 ft.

GARVIN COUNTY — National Production Co's Littrell 1, ne ne ne 31-2n-3w, dr 1435 ft. George Pace's Smith 1, sw sw ne 35-1n-1e, dr 1710 ft. Charles E. Carter et al's Wood 1, nw sw se 5-4n-3e, sd 2070 ft. Anderson-Kerr et al's Rodke 1, nw nw se 17-4n-1w, lcn.

GRANT COUNTY — Helmerich-Payne's Crouse 1, cne sw 29-25n-8w, td 6100 ft, csg trouble.

GREER COUNTY—Fred Morgan et al's H. G. Cardner 1, csw se 19-4n-22w, dr 400 ft. M. C. Ent & R. C. Camp's Siminton 1, sw sw se 29-5n-21w, lcn.

HARMON COUNTY—Jud Leath et al's McConnell 1, nw nw nw 22-3n-24w, ru & sd. Wilson & Walker's Wilhelm 1, se se se 30-4n-24w, ru mach.

HUGHES COUNTY—Freeman et al's Kite 1-A, nw nw ne 8-6n-10e, sd 598 ft. Dandridge & Crane's Mead 1, nw nw ne 17-5n-9e, sd 1300 ft. Amerada Pet Corp's Adams 1-A, ne ne sw 31-9n-9e, td 4224 ft.

JACKSON COUNTY—Palo Duro Oil Co's Ealum 1, se se sw 15-2n-21w, sd 840 ft. Scheig's James 1, ne ne ne 23-1n-20w, sd 1904 ft. Associated Oil Co's Harrell 1, ne ne sw 13-1s-21w, dr 1195 ft. Selby Oil Co's R. C. Holt 1, se se sw 15-2n-20w, sd 1805 ft. Whatley & Whatley's Holt 1, nw sw se 20-1n-20w, dr 1040 ft. Scheig et al's C. W. Cole 1, ne se se 5-1n-20w, dr 1489 ft. A. H. Emenhiser's Murrell 1, se sw se 17-3n-21w, sd 910 ft. Jack Kilgore et al's Wooldridge 1, se se ne 15-3n-21w, dr 945 ft. Golden & Cochran's L. H. Duncan 1, sw sw ne 34-2n-21w, dr 1505 ft. Scheig et al's Sue Richardson 1, sw nw se 31-1n-19w, lcn. J. G. Buell et al's M. E. Kizzar 1, se se ne 2-2n-22w, dr 775 ft. Triangle Oil Co's Fox 1, cel se nw 11-3n-20w, spd & sd. Burke-Greis Oil Co's Milbrant 1, sw nw sw 31-3n-19w, lcn.

JEFFERSON COUNTY — Gypsy Oil Co's James 1, sw se se 30-6s-6e, rust.

KAY COUNTY—Harris-Haun's Schuessler 1, cnw sw 3-28n-2e, dr 3100 ft. J. T. Lindsay's Waggoner 1, nw nw ne 3-27n-1e, lcn.

KIOWA COUNTY — Hanson & Patton's Beeler 1, ne ne ne 11-6n-15w, dr 35 ft.

LINCOLN COUNTY—Carter Oil Co. et al's McFarland C-38 1, sw sw ne 18-13n-4e, dr 1447 ft.

LOGAN COUNTY—Sinclair Prairie Oil Co's School Land 1, se se se 36-17n-1w, recementing Shell Pet Corp et al's Hirzel 1, se sw sw 7-16n-2w, td 6031 ft, comp. Slick-Urschel's Pennington 1, csw ne 10-16n-1w, dr 5302 ft. J. C. Shaffer et al's Watson 1, cnw ne 15-15n-4w, dr 4290 ft. Sinclair Prairie Oil Co & Slick-Urschel's Koatsch 1, sw sw sw 23-15n-3w, dr 5475 ft. Mid-Continent's Community Nunn 1, se se nw 25-15n-1e, lcn. Anderson-Kerr et al's Renfro 1, ne ne ne 33-16n-4w, rig. J. C. Shaffer's Hammond 1, se se sw 10-15n-4w, dr 4653 ft.

LOVE COUNTY — Amerada Pet Corp & Stanolind Oil & Gas Co's Westheimer & Daube 1, nw se se 27-6n-2e, pb to straighten.

MARSHALL COUNTY—Paul R. Robb's Vittetoe 1, cne se 11-5s-4e, td 5214 ft.

McCLAIN COUNTY — Anderson & Kerr's Newburn 1, nw sw ne 24-5n-3e, rig.

McCURTAIN COUNTY—J. V. Schrivner et al's Central Life Association 1, ne sw sw 24-6s-21e, sd.

MURRAY COUNTY—Equitable Oil & Gas Co's Scott 1, csl n½ nw nw 15-1s-3e, sd 1500 ft. Manahan Oil Co's Ward 1, ne se nw 18-1s-3e, td 1417 ft. Equitable Oil & Gas Co's Baer 1, sw nw nw 21-1s-3e, dr 320 ft. Equitable Oil & Gas Co's Ferguson 1, ne ne sw 36-1s-3e, cellar & pits.

OKFUSKEE COUNTY—Amerada Pet Corp et al's Jaynes 1, nw nw sw 20-10n-10e, td 3955 ft.

OKLAHOMA COUNTY—Anderson-Kerr et al's Linn 1, sw sw nw 17-14n-2w, dr 4735 ft. W. H. Atkinson et al's Reed 1, ne ne ne 4-12n-3w, dr 3400 ft. Gypsy Oil Co's Schock 1, nw sw sw 2-14n-3w, set 15½-in csg 125 ft, td 224 ft.

PAWNEE COUNTY—Trees Oil Co's Susan Wedd 1, cse se 27-24n-5e, lcn.

PITTSBURG COUNTY—P. H. Gray et al's Lee 1, nw nw se 12-5n-13e, dr 1200 ft.

PONTOTOC COUNTY—Paramount Oil Co's Graham 1, sw se sw 13-1n-7e, dr 3325 ft. H. M. Marcum's Magnuson 1, sw se se 23-2n-7e, td 1930 ft, comp. Mudge Oil Co's Clampett 1, sw nw nw 10-2n-6e, sd 915 ft. Crabb-Craw Oil Co's Breco 1-A, se ne sw 3-4n-6e, sd. Southern Oil Co's Walker 1, nw nw sw 11-4n-6e, sd 820 ft. Crabtree's Chandler 1, ne se sw 4-5n-6e, sd 150 ft. Gillette & Kroeger's Duver 1, nw nw se 36-1n-6e, dr 1185 ft. Fleetborn Oil Corp's Oliver 1, ne nw se 21-4n-5e, rur. Phillip Boyle's McCracken 1, ne nw nw 31-5n-4e, cellar & pitts.

POTTAWATOMIE COUNTY—C. W. James et al's Neal 1, nw se sw 4-5n-3e, td 3807 ft, to pb. Howard Sherman et al's O. N. Wingo 1, ne nw se 32-10n-5e, dr 2230 ft.

SEMINOLE COUNTY — Verser & Clay's Thomas 1, ne se nw 1-6n-6e, sd 2802 ft. Ray Dorris & J. T. Hall's Dorris 1, se se sw 31-10n-7e, hfw 520-60 ft, sd 608 ft. Sovereign Drilling Co et al's Thomas 1, nw nw se 8-6n-7e, 2000 ft oih 3875 ft, td 3918 ft.

STEPHENS COUNTY — J. W. Madison's

Tussey 1, sw se nw 24-1n-4w (owdd), sd. Wm. Angle et al's Cooper 1, ne nw nw 23-2n-7w, rur.

TILLMAN COUNTY—Laper et al's Conrad 1, ne ne ne 35-1s-19w, dr 720 ft.

WASHITA COUNTY—Anadarko Basin Oil Co's Ash Wolf 1, ne ne sw 23-9n-17w, ru & sd.

WEST TEXAS

ANDREWS COUNTY—Fuhrman Pet. Corp.'s W. H. Boner 2-B, sec 25, blk A-43, PSL sur, top anhydrite 1710 ft, top salt 1730 ft, gauged 510 bbls oil 8 hrs, 4406 ft. Humble Oil & Ref. Co.'s J. S. Means 3, sec 9, blk A-35, PSL sur, top salt 2134 ft, dr 4120 ft; R. M. Means 3, se ¼ sec 4, blk A-45, elev 3177 ft, flowed 86 bbls oil 14 hrs after using 3000 gallons acid in lime pay 4612-28 ft; R. M. Means 4, c se se sec 4, blk A-45, dr 1105 ft. Honolulu Oil Corp.-Llano Oil Co.'s J. E. Parker 1-B, nec w½ ne¼ sec 11, blk A-43, PSL sur, rig. Lou Stogner & A. E. Service Drlg. Co.'s J. W. Richards-McWhorter 1, c se ne sec 4, blk A-37, PSL sur, elev 3350 ft, top anhydrite 1590 ft, top salt 1670 ft, top Yates 2890 ft, dr 3440 ft. E. M. Wahlenmaier Pet. Corp.'s Odessa Ranch Co.-Texas Co. 1, c ne sec 10, blk A-32, PSL sur, dr 100 ft; Cox 1, c nw ne sec 8, blk A-35, PSL sur, lcn. R. L. York & O. C. Harper's Hereford 1, c labour 12, league 315, Parmer Co. S. L. sur, top anhydrite 2280 ft, top salt 2320 ft, dr 3800 ft. J. W. Tripplehorn et al's C. E. Ogden-Humble 1-A, sec sw¼ sec 6, blk A-46, rig.

BORDEN COUNTY—John I. Moore et al's Clayton-Johnson 1, sec 29, blk 32, T&P Ry. sur, T-4-N, lcn abn.

BREWSTER COUNTY—Floyd C. Dodson et al's Texas American Synd. 1, c ne ne sec 66, blk 10, H&GN Ry. sur, deep test, pb from 180 to 150 ft. C. M. "Dad" Joiner et al's W. J. McIntyre 1, sec 31, blk 352, W. J. Mitchell sur, dr 2150 ft. K. H. King & C. R. Franklin's A. S. Gage 1, sec 138, blk B-22, GH&SA Ry. sur, sd 800 ft. S. G. Smith et al's Mrs. Ed. Decie 1, nwc se¼ sec 7, blk 1, G. T. Ry. sur, co with so lime 805 ft. G. H. Storey et al's Jim P. Wilson 1, c nw se sec 3, blk 212, T. & St. L. Ry. sur, rig.

CRANE COUNTY—Gulf Prod. Co.'s W. N. Waddell et al 1, c nw nw sec 4, blk B-27, PSL sur, Ordovician lime test, elev 2554 ft, top salt 510 ft, dr 3780 ft; M. B. McKnight 1, c sw sw sec 9, blk B-21, PSL sur, rig. American-Liberty Oil Co. et al's J. B. Tubb-Humble 1, swc sec 11, blk B-27, PSL sur, rig. Wahlenmaier Pet. Corp. et al's TP Land Trust 1, sec 33, blk 44, T&P Ry. sur, T-3-S, elev 2796 ft, top anhydrite 1100 ft, top salt 1325 ft, top lime 3130 ft, good show oil and gas, dr 3485 ft.

CROCKETT COUNTY—E. C. Leslie and Hiller's J. S. Todd 1, sec 26, blk "WX", GC&SF Ry. sur, sd 580 ft.

CULBERSON COUNTY — Anderson-Prichard Prod. Corp.'s H. A. Borders 1, sec 34, blk 69, 4565 ft, fsh 1125 ft. Miller et al's fee 1, sec 21, blk 97, PSL sur, sd 2105 ft. Nelwood Drlg. Co.'s A. L. Hall 1, sec Sec 11, blk 54½, PSL sur, sd 200 ft.

JEFF DAVIS COUNTY — C. M. "Dad" Joiner et al's Jones-Coffield 1, sec 8, blk 3, H&TC Ry. sur, dr 765 ft.

DAWSON COUNTY — Fred Turner and Harry Adams Corp.'s John Robinson 1, c nw sec 46, blk "M", EL&RR Co. sur, elev 3078 ft, top salt 1970 ft, top lime 2885 ft, sg 3280 ft, dr 4550 ft.

ECTOR COUNTY—Empire G&F Co.'s H. E. Cummins 1, sec se¼ sec 10, blk 44 T&P Ry. sur, T-1-N, dr 820 ft. Gulf Prod. Co.'s C. A. Goldsmith 1, c nw sec 10, blk 44, T&P Ry. sur, T-1-S, elev 3112 ft, top anhydrite 1482 ft, top salt 1518 ft, dr 2330 ft. International Pet. Corp.-O. C. Harper's E. F. Cowden 1, c se se sec 25, blk 44, T&P Ry. sur, T-2-S, elev 3019 ft, top anhydrite 1605 ft, top salt 1645 ft, dr 3580 ft. Landreth Prod. Corp. et al's Frank Cowden 1, swc sw¼ sec 18, blk 44, T&P Ry. sur, T-1-N, elev 3192 ft, ur 860 ft; Clarence Scharbauer 1, sec nw¼ sec 13, Blk "A", PSL sur, lcn. Neville G. Penrose et al's A. Kloh-TP Land Trust 1, nwc w½ se sec 31, blk 45, T&P Ry. sur, T-1-S, elev 3154 ft, top anhydrite 1290 ft, top salt 1375 ft, top lime 2700 ft, dr 3490 ft.

EL PASO COUNTY—Tri-State Oil Co.'s Chas. Kunkel 1, sec 237, SF No. 7232, dr 85 ft.

FISHER COUNTY—Tide Water and Merry Bros. & Perini, Inc.'s M. Howard 1, elev 1849 ft, ne¼ sec 180, blk B-2, H&TC Ry. sur, top lime pay 3665-3677 ft; Hittson-Millsap 1, ne¼ sec 177, blk B-2, H&TC Ry. sur, mim.

GLASSCOCK COUNTY—John I. Moore-Loffland Bros. et al's L. S. McDowell 1, sec 22, blk 34, T&P Ry. sur, T-2-S, Ordovician lime test, elev 2534 ft, top lime 2137 ft, top Crinoidal lime 9471 ft, dr 9660 ft; McDowell 1, lse 1, elev 2528 ft, dr 2155 ft.

GARZA COUNTY—M. L. Richards et al's J. R. Sullivan 1, nwc sec 3, S. E. Harper & K. Aycock surveys, dr 375 ft.

JONES COUNTY—Frank Oyster and Putman Oil Co.'s J. J. Steele 1, lot 8, C. Allen sur No. 10, A-500, lcn. Coltex Oil Co.'s H. N. Smith 1, se¼ sec 25, T&P Ry. sur, blk 19, dr 2125 ft. Fondren Production Co.'s Sam R. Cox 1, sec 74, blk 14, T&P Ry. sur, dr 1215 ft. Dr. C. E. Johnson et al's W. T. Young 1, blk 190, B. Trevino sur, ur 1680 ft. Shappell Oil Co.'s B. A. Stephenson 1, nec nw¼ sec 7, blk 16, T&P sur, dr 1200 ft.

LOVING COUNTY—Mason Oil Co.'s M. Kyle 1, c nw se sec 22, blk 55, T&P Ry. sur, Tsp. 1, fsh 495 ft.

LYNN COUNTY—Edgar T. Hart & Wanete Oil Co.'s C. O. Edwards 1, se¼ sec 29, blk 1, L & S V Ry. sur, elev 3112 ft, top anhydrite 1690 ft, top salt 1945 ft, mixing mud, td 4078 ft.

PECOS COUNTY—Gulf Prod. Co.'s White-Baker 5, nec sec 88, blk 194, GC&SF sur, elev 2981 ft, dr 245 ft. Cardinal Oil Co.'s White-Baker 1, nwc sw ¼ sec 51, blk "Z", TC Ry. sur, top lime 1806 ft, so 1832 ft, dr 2000 ft. International Pet. Corp.'s White-Baker 1, nec se¼ sec 4, blk 207, TC Ry. sur, elev 2773 ft, dr 1100 ft. Trans-Texas Oil Co.'s C. M. Caldwell 1, sec Sec 27, blk 50, T&P Ry. sur, Tsp. 9, sd 1650 ft. John Roseborough et al's Sidlow 1, n¼ sec 18, blk 3, H&TC Ry. sur, lcn.

REAGAN COUNTY—Dobbs Oil Co.'s W. E. Friend 1 (681-ac), nwc s½ sec 3, Wm. Allen sur, top salt 1060 ft, dr 1750 ft. Byrd-Frost, Inc.'s O. F. Boyd 1, c se¼ sec 6, blk "E", L&SV Ry. sur, dr 750 ft. Skelly Oil Co. et al's University-Utah 1-D, c sw nw sec 33, blk 8, Ordovician lime test, elev 2891 ft, top Cisco, 9174 ft, top Simpson 9400 ft, dr 9750 ft.

REEVES COUNTY—J. E. Cunningham & A. R. Eppenauer Drlg. Co.'s Tiller Bros. 1, R. P. Altman & C. C. Wyatt surveys, recemented 7-inch cas 3743 ft. Kenneth Slack & L. M. White's Francis Reeves 1, c se nw sec 20, blk 56, PSL lcn.

RUNNELS COUNTY—Blaylock & Co.'s Y. J. McGaughan 1, T. M. Fowler sur No. 444, lot No. 14, sd 535 ft. Grover Hart et al's G. W. Ash 1, nec w½ sec 123, E. T. Ry. sur, sp and sd. Herman Giesecke et al's fee 1, c ne ne sec 121, J. Hughes sur, lcn. Melrose Oil Co.'s Mrs. L. P. Wood 1, Willett Holmes sur No. 100, sd 2507 ft. R. Wells et al's W. F. James 1, D. Diaz & N. Travis sur, sd 1010 ft.

SCHLEICHER COUNTY—J. M. Cooper et al's Bert Page 1, sec 40, Blk "L", GH&SA Ry. sur, Ordovician lime test, elev 2270 ft, dr 5990 ft. W. C. Proctor, K. Kimberlin & J. D. Wesner's Judkins-Spencer (Pure) 1, c sw sec 4, Hooper-Wade sur, blk "A", Cert. No. 127, Ordovician lime test, sp and sd.

SCURRY COUNTY—H. H. Coffield & W. S. Guthrie's O. H. Holliday 1, sec 120, blk 97, H&TC Ry. sur, sd 2967 ft. C. T. McLaughlin et al's W. C. Allen 1, c ne sec 398, blk 97, H&TC Ry. sur, dr 620 ft.

STERLING COUNTY—Darby Pet. Co.-J. I. Moore & Merry Bros. & Perini, Inc.'s R. L. Stansberry 1, c sw ne sec 20, blk 30, W&NW Ry. sur, dry and aban 3142 ft.

STONEWALL COUNTY—Merry Bros. & Perini, Inc.-Humble O&R Co.'s C. L. Williams 1, sec 6, blk "C", AB&C sur, sd 3005 ft.

SUTTON COUNTY—Paul C. Teas et al's C. E. Mower 1, c ne sw sec 39, blk 5, TW& NG Ry. sur, Ordovician lime test, top lime 3268 ft, so 4245-58 ft, dr 4520 ft.

TAYLOR COUNTY—H. Crissman et al's Abilene fee 1, sec 66, BAL sur, dr 1770 ft. Eastland Oil Co. et al's C. R. Tittle 1, c nw nw sec 37, blk 19, T&P Ry. sur, mim.

UPTON COUNTY—Baldridge Oil Co.'s S. Peck 1, sec sec 29, blk 41, T&P Ry. sur, T-4-S, dr 370 ft. Gulf Prod. Co.'s J. T. McElroy 103, c nw sw sec 197, blk "F", Ordovician test, elev 2625 ft, top lime 2620 ft, top Simpson 11,347 ft, dr Mid-Ordovician lime 12,061 ft. Humble O&R Co.'s L. W. Pollock-Gulf 1, c nw sec 4, blk "M", EL&RR sur, Ordovician lime test, top salt 1670 ft, top Yates 2560 ft, dr 3690 ft.

WARD COUNTY—Rector Oil Co. et al's Lee Monroe 2, e cor sec 2, blk 1, W&NW Ry. sur, dr 2000 ft. Magnolia's Geo. Sealy (sec 43) 1, nwc sw¼ sec 43, blk "F", top anhydrite 1036 ft, ur 17½-in cas 1228 ft.

WINKLER COUNTY—Barnsdall Oil Co.'s Brown-Altman 1-B, sec nw sec 6, blk B-5, PSL sur, salt 1150-2268 ft, top lime 2344 ft, dr 2640 ft. Frank M. Greene et al's J. T. Cross 1, nec nw¼ sec 4, blk B-10, PSL sur, mim. Magnolia Pet. Co.'s J. B. Walton 6, top lime 2521 ft, testing 2960 ft. Sid Richardson et al's J. B. Walton-Pure 1, sw ¼ sec 1, blk B-3, PSL sur, elev 2940 ft, top anhydrite 1131 ft, sd 2070 ft. Sinclair Prairie Oil Co.'s H. E. Cummins 3, elev 2867 ft, dr 755 ft. Siosi Oil Co.'s J. C. Lovett 1, nec sec 36, blk B-26, PSL sur, dr 1690 ft. Skelly Oil Co.'s J. M. Halley 2, ne¼ sec 25, blk B-11, PSL sur, elev 2726 ft, est. 25,000,000 ft gas, sd 3090 ft. Sun Oil Co.'s S. M. Halley 1, sec n½ sec 24, blk B-12, PSL sur, elev 2736 ft, top lime 2485 ft, cem 8¼ cas 2655 ft. TP Coal & Oil Co.'s Lum Daugherty 1, sec n½ se¼ sec 2, blk 26, PSL sur, dr 1100 ft.

EAST TEXAS

ANDERSON COUNTY—Gulf Prod. Co.'s W. C. Calloway 1, P. Martin sur, Camp Hill area, lcn; Davey & Royall 2 (174-ac), M. Rogers sur, elev 572 ft, completed 519,000 ft gas and spray oil, td 485 ft; M. Maddox 1 (120-ac), D. Stilts sur, dr 615 ft; L. B. Ross 1 (35.7-ac), J. C. Rosson sur, elev 654 ft, top Pecan chalk 3976 ft, dr 4020 ft; Mary J. Ross 1 (54.7-ac), Robt. Erwin sur,e lev 487 ft, Pecan chalk 3766-3970 ft, Austin chalk 4509-4696 ft, top Woodbine 4749 ft, top sand 4796 ft, tested sw at 4750-4800 ft, top Red Beds 4828 ft, top second sand 4937 ft, sd 5142 ft; Robinson 1, dr 200 ft. Gulf and Humble's O. G. Rogers 1 (267¼-ac), Daniel Parker sur, 5 mi sw of Elkhart, elev 301 ft, top Pecan chalk 4095 ft, dr 4130 ft. H. L. Hunt et al's Mrs. Alice Scott-Pure 1 (300-ac), Jas. Crawford sur, 2 mi nw Slocum, lcn. Tide Water & Texas Seaboard's N. N. Wills 21-A, Cayuga field Trinity test, elev 308 ft, dr 6350 ft; John Smith 1 (49.1-ac), John Adams sur, Long Lake field gas unit, elev 295 ft, rig; C. T. Valentine 1 (301-ac), John Little sur, 9 mi n of Palestine, lcn. Joe A. Worsham et al's W. F. Wathen 1 (80-ac), B. Towles sur, nw of Cayuga field, elev 324 ft, Pecan chalk 2255-2398 ft, Austin chalk 3220-3585 ft, top sand 4063 ft, testing 4091 ft.

BOWIE COUNTY—Tex-Ark Oil Co.'s J. B. Hamilton 1 (40-ac), Jessie Milam sur, elev 272 ft, sd 250 ft. A. L. Wills et al's Irene Parsons 1, W. B. Hawkins sur, Old Boston area, lcn.

CHEROKEE COUNTY — Killough et al's J. S. Strickland 1 (40-ac), Urian Moore sur, 7 mi nw of Jacksonville, elev 433 ft, sd 3505 ft. Ponta Oil Co. et al's C. W. Darley 1 (35-ac), (east) Cyrus Parks sur, 2¼ mi s of Summerfield, elev 434 ft, fsh 1480 ft. E. M. Thomason & Co.'s W. J. Addis 1 (80-ac), Jessie T. Jones sur, elev 471 ft, top broken Pecan chalk 3951 ft, hard chalk 4020-4277 ft, top Austin chalk 4897 ft, fsh 5135 ft. T. J. Wood & Young's New Birmingham 3 (160-ac), Levi Jordan sur, Rusk pool, rig.

FREESTONE COUNTY—J. A. Hoover and R. J. Bain's W. W. McFall 1 (65-ac), S. Garrison sur, lcn. J. B. Daniel Oil & Royalty Co.'s P. D. C. Ball 2 (300-ac), J. Y. Aguilera sur, Red Lake area, mim.

GREGG COUNTY—O. T. Clark et al's T. G. Williams 1 (100-ac), David Hill sur, 3 mi ne Longview, elev 426 ft, Pecan chalk 2391-2985 ft, top Austin chalk 3447 ft, tested dry 3620 ft.

HENDERSON COUNTY—Great State Oil Corp.'s R. Sid Ansley 1-A, N. B. Thompson sur, elev 268 ft, sd for water, td 1640 ft. Taubert & McKee (was Crosby & Culp's) M. T. Dodd 1 (160-ac), Geo. Aldrich sur, 4 mi e of Malakoff,

elev 376 ft, Pecan chalk 2390-2504 ft, Austin chalk 3456-3610 ft, pull liner, td 4049 ft. H. M. Wilson et al's H. M. Wilson 1 (943-ac), Thomas Caro sur, 5 mi n of Malakoff, dk.

HILL COUNTY—Humble's M. Holderman 1 (80.7-ac), C. Sullivant sur, 1 mi w of Mount Calm, elev 659 ft, Austin chalk 685-1015 ft, top Washita section 1170 ft, top Georgetown lime 1370 ft, top Fredericksburg 1590 ft, top Glen Rose 1885 ft, top Travis Peak 2668 ft, sd in shale 3398 ft.

HOPKINS COUNTY—D. A. Hale et al's L. N. Hall 1 (70-ac), A. Caro sur A-143, elev 506 ft, Pecan chalk 1825-2040 ft, top Austin chalk 2728 ft, dr 2785 ft.

HUNT COUNTY—D. T. Cauble et al's Y. B. Reed 1 (220-ac), F. Thweatt & C. B. Payne sur, 3 mi se Greenville, base Austin chalk 2088 ft, top Woodbine 2809 ft, top Red Beds 2874 ft, dr 3260 ft. H. G. Samson and Shawver et al's J. R. Phillips 1 (53 1/3-ac), W. L. James sur, elev 522 ft, top Gober chalk 550 ft, top Austin chalk 1113 ft, sd 1620 ft.

KAUFMAN COUNTY—G. H. Germany et al's D. Clark-W. S. Kirby 1, S. Edens sur, sd 1780 ft. L. P. Kean et al's J. B. Hunter 1, R. Sowell sur, 4 mi s of Terrell, elev 453 ft, top Austin chalk 1785 ft, sd 3195 ft. Murray and Emerson's G. W. Martin 1 (100-ac), W. F. C. Butler sur, 2 mi ne of Kemp, sp and sd.

LIMESTONE COUNTY—C. F. Carter et al's S. E. Dean 1 (75-ac), Pedro Varella sur, 3½ mi sw of Mexia, sd 1717 ft. Crawford Pet. Co. et al's Vol DeLong 1 (59.3-ac), Pedro Varella sur, 2½ mi n of Thelma, elev 522 ft, top Woodbine section 2750 ft, sand 2772-91 ft, shale to 2807 ft, small gasser. Dan H. Daugherty et al's Sallie Welch 1 (94-ac), Pedro Varella sur, top Austin chalk 2350 ft, sd 2700 ft. J. Edward Mills et al's J. B. Hunt 1 (34¼-ac), Israel Woods sur, 3 mi ne of Kosse, Pecan chalk 2010-2137 ft, Austin chalk 2780-3158 ft, top Woodbine sand 3578 ft, csg collapsed 3636 ft.

MORRIS COUNTY—Marydun O&G Co.-Sterling O&R Co.'s T. C. Conner 1 (1000-ac), M. W. Mathews sur, elev 294 ft, top Pecan chalk 2345 ft, re-bldg dk 2678 ft. Steve J. Rontondi et al's W. & C. Smith 1 (50-ac), M. C. Vela sur, 2½ mi sw Naples, rig. Watson et al's P. M. Staggers 1, J. D. Nelson sur, cem 6⅝-in csg 4095 ft, td. 4259 ft. B. L. Watson et al (was HNH Drl. Co.'s) E. Hall 1, Levi Jordan sur, to dd from 4002 ft.

NAVARRO COUNTY—W. J. Keeling Estate and Peyton Bros.' J. F. Rushing 1 (84-ac), Henry Ford sur, 6 mi w of Currie, elev 530 ft, Austin chalk 2155-2395 ft, top Woodbine 2858 ft, sd 2880 ft. L. N. McCulloch et al's Berry Bros.. 1 (35-ac), W. W. Moss sur, sd 625 ft. Wm. C. McGlothlin et al's M. A. Dobbin 1 (138-ac), E. Lowry sur, 2 mi n Corsicana, elev 443 ft, Austin chalk 1244-1701 ft, sd for dst 2102 ft. Wiggins et al's D. A. Donoho 1 (63½-ac), John Cauple sur, 2 mi sw Corsicana, elev 467 ft, sd 1425 ft.

RED RIVER COUNTY—C. M. "Dad" Joiner et al's D. Rust 1, C. C. Wilborn sur, s edge Avery, dk. J. E. Dinger Oil Co.'s W. T. Norris 1 (351-ac), Joseph Guest sur, 1 mi s of Detroit, elev 464 ft, sd for csg 1250 ft.

ROBERTSON COUNTY—H. L. Patton Co's W. H. & H. A. Ely 1 (616-ac), Antonio Manchaco sur, 5 mi se Hearne, rig.

RUSK COUNTY—Clark et al's J. T. Irwin-Hapgood 1, Geo. May sur, 5 mi ne of New Salem, lcn. Ben E. Lamb et al's Haywood Leath 1 (185-ac), L. J. Dooley sur, 2½ mi e of Pirtle, elev 370 ft, Pecan chalk 2418-2793 ft, Austin chalk 3352-3512 ft, bailing 3837 ft.

SMITH COUNTY—W. L. Cloud and A. G. Deck's Dora Kendall 1, John Williams sur, 3 mi e of Van field, sd 1650 ft. R. W. Fair et al's Fred Terrell 1 (72-ac), Eli Delk sur, 8 mi w Winona, lcn. Dr. Garland et al's J. W. Bartlett 1, R. G. Stewart sur, A-955, 1 mi se Jamestown, elev 498 ft, dr 2520 ft. W. R. Harrison et al's W. P. Rushing 1, Jacob Herrin sur, 1½ mi se Whitehouse, elev 393 ft, pb from 4673 to 4330 ft, sd to re-cement. R. L. "Bob" Peveto & V. E. Howze's F. J. Watson 1 (77-ac), Oliver Anderson sur, elev 574 ft, top broken Pecan chalk 3550 ft, hard chalk 3565-3812 ft, base Austin chalk 4953 ft, coring Woodbine sand 4970 ft. Sun Oil Co's Longley & Reeves 1 (151.45-ac), J. Lindley sur, 4 mi ne Chapel Hill, rig.

TITUS COUNTY—Steve Rotundi et al's O. C. Lillianstern 1 (40-ac), W. H. Crawford sur, 5 mi se of Talco, elev 301 ft, dk.

UPSHUR COUNTY—G. W. Berry et al's D. M. Hollins 1, B. Asher sur, lcn. Russell Tarr et al's J. C. Hall 1 (180-ac), Wm. McFadden sur, 1½ mi nw Kelsey, lcn.

VAN ZANDT COUNTY—J. C. Acree et al's F. W. Anderson 1 (160-ac), John Blair sur, 4 mi n of Wills Point, sd 2065 ft. Newt Tidwell and W. J. Rogers' L. E. Breucher 1 (98¾-ac), David Clapp sur, 5 mi se Wills Point, rig.

WOOD COUNTY—R. M. Coleman & Ed S. Hill's J. J. Junior 1 (59-ac), Jas. M. Moore sur, 7 mi sw of Winnsboro, sp.

EAST TEXAS BORDER COUNTIES

MARION COUNTY—Ed S. Holman's Lizzie Henderson A-1, R. Bennington sur, re-cementing 6⅝ in csg 1919 ft, top Pecan Gap, pb from 3407 to 2445 ft, plan to use acid.

PANOLA COUNTY—Harry Flinschbaugh & J. E. McAneny's M. G. McCormick 1, Jas. P. McAdams sur, rur. J. L. Cadrin's Robt. Johnson 1, J. Johnson sur, dk. Geo. Le Grand's P. J. Laidleigh 1, A. Thompson sur, wocs 10-in csg 55 ft; S. B. Wallace 1, A. M. McLaughlin sur, rur. G. F. Hudson's J. F. Nail 1, C. McCrary sur, claim so, arr make ds test, td 2345 ft.

SHELBY COUNTY—I. M. Bradley et al's J. J. Ashberry 2, J. M. Mitchell sur, top PG 2045-ft, cemtd 6⅝ in csg 2960 ft, td 3070 ft. O. P. Bush, Tr.'s Pickering Lbr. Co. 1, W. H. Harvey sur, dr 1535 ft.

SOUTH TEXAS

ATASCOSA COUNTY—Southwestern Dev. Synd.'s T. O. Tom 1, Ed O'Boyle sur No. 7, dr 725 ft.

BANDERA COUNTY—Plateau Oil Co.'s R. G. Garrison 1, sec 506, GC&SF sur, dr 2310 ft.

BASTROP COUNTY—Hiram Edward's Murchison 1, A. Litton sur, dr 850 ft. Malone & Owens' S. S. Spooner 1, 500 ft nl, 3550 ft swl of L. Leverenz sur, dr 100 ft. Marts & Beavens' W. L. Miller 1, blk 22, Dennis Dykes sur, dr 1900 ft. Nelson Puett's J. H. Carroll 3, A. Mays sur, sp.

BEE COUNTY—Dirks Bros.' I. J. Miller 1, Cayetno Rivas sur, lcn. Eastland Oil Co.'s Fred Schroeder 1, Sarah Louis sur, dr 1935 ft, top Vicksburg 1334 ft, top Jackson 1354 ft. Felmont Corp.'s J. T. Earnest 1, 2200 ft el, 466 ft nl of Bee County School Land sur No. 17, 4 mi sw Yougeen, dk. A. Hartzendorf's Fee 1, G. A. Kerr sur, dr 2200 ft. Humble O&R Co.'s Thompson 2, Garret Roche sur, dr 5200 ft. Jamison & Byron's P. L. Campbell 1, Brooks and Burleson sur, Ab 129, sand 3956-60 ft, dest 700 ft oil, 75 lbs. 14 min, dr plugs, washing in. Kelly & Kline's Evans 1, N. Recendes sur, n of Beeville, making lcn. Paul Meaders' Keller 1, Alcorte sur, tentative lcn. Worth Oil Co.'s Rutledge 1-A, B. Q. Hadley sur, dr 3120 ft.

BEXAR COUNTY—C. A. Campbell et al's Margaret Cantu 1, J. M. Arocha Gr, on pump 1481 ft, est abt 12 bbls per day, not yet complete. N. G. Carter's J. F. & F. X. Bilhartz 1, 150 ft nl and el of most easterly n cor of 385¾ acre tr in F. Rolen sur, 1 mi s of Von Ormy, dr 300 ft. M. A. Frederich's Fee 1, F. Recardo sur, dr 1300 ft. Jones & Keiffer's Ethel LaGrange 1, F. Rolen sur, td 1005 ft, r to set csg. McPhee & Briggs' Florence Lamb 1, M. de Luna sur No. 4, dr 1100 ft. Noble & Aiken's R. W. DeVilbliss 1, Martinez sur, bailing 2230 ft, show little o&g. George O'Neill's Holly Crouch 1, Miguel Gotari sur No. 5, td 1396 ft, 4 in csg 1362 ft, prep to dr out plugs. Carroll C. Reborn's Claud McCauley 1, Wm. Harris sur No. 52, dr. Richcul Oil Co.'s Wm. A. Russell 2, Richardson sub, A. Navarro sur, dr 500 ft. Trawalter & Umburn's S. Wetz 2, S. Jett sur No. 53, dr 420 ft. Effie Weilbacher's Caroline Hansen 1, John Christopher sur, sp and move off rig pending litigation; August Ernst 3, John Christopher sur, abt 600 ft n No. 1, dr water well.

CALDWELL COUNTY—H. H. Coffield's C. C. Franks 1, E. Brown sur, prep to sp. F. Meyers' W. T. Mooney 1, S. Seal sur, dr 350 ft.

CALHOUN COUNTY — Continental Oil Co.'s Am. National Realty Co. 2, P. Garcia sur, sec 6, blk C, ru. Steinberger Pet. Corp.'s Shofner 1, A. Esparza sur, coring sand 6215 ft, dst 6100-80 ft show 700 lbs pressure, some distillate 13 min. Southwest Oil Corp.'s E. H. Welder 3, making lcn.

DE WITT COUNTY—Sunray Oil Co. et al's W. W. Buehrig 1, sec 7, T&NO sur, dr 3400 ft.

DUVAL COUNTY—Al Buchanan & Blanco Oil Co.'s G. Ruiz Est. 1, sec 73, sp. Conway & Buescher's A. H. Hoffman 2, sec 116, lcn, wor. Hamil & Hamil's G. Ruiz Est 1, sec 41, ru. Harvey & Henderson's Chernoskey 1, sur 226, sd 2125 ft for repairs. Humble O&R Co.'s Ruiz Estate 3, sec 553, dr 1500 ft. Intrepid Oil Co.'s Parr Ranch 1, sec 26, td 4856 ft, re-cement, wocs. Magnolia Pet. Co.'s Bennett 1, 330 ft wl and sl of sec 441, lcn; C. W. Hahl 1, sec 67, td 2945 ft, pb 2820 ft, wocs. G. G. Mortimer et al's Peters Ranch 2-B, sec 196, sp and sd. W. L. Pearson et al's Fitzsimmons 1, sec 291, td 4552 ft, hole junked, pb, sdtr to dd. Tex.-La. Corp.'s Hubbard 1, 700 ft wl, 300 ft nl s½ sec 84, Loma Novio area, set 40 ft 10 in csg, wocs (lcn and operator corrected). The Texas Co.'s M. Vela 2, sec 42, dr 2700 ft.

FRIO COUNTY — Amerada Petroleum Corp.'s Davies & Burke 1, B. L. Crouch sur, sp and set sur csg, wocs. W. D. Bacon et al's J. F. Burns 1, Clifton sur, lcn. Shoemaker et al's M. Roach Estate 1, sec 139, sd 2500 ft.

GONZALES COUNTY—Southwestern Dev. Synd.'s W. S. Atkinson 1, S. Y. Reims sur, sd 3720 ft.

GUADALUPE COUNTY—Diamond Half Oil Co.'s Lottie Bibbs 1, Joel R. Robinson sur, lcn. A. D. Locke's Mrs. N. S. Lowman 1, C. Campbell League, dr 1750 ft. Siedeman's Fee 2, Esnaurrizar sur, dr 2025 ft. Suttle et al's Baenzinger 1, A. O. Machola sur, td 2155 ft, ru and sd.

HIDALGO COUNTY — D. D. Oil Co.'s Brock & Showers 1, lot 8, blk 9, Vista Hermosa sub, por 80, dr 4100 ft. D. D. Oil Co. & K. D. Harrison's Mrs. Lula George 1, tr 13, por 100, dr 1390 ft. D. M. C. Oil Co.'s Daskam 1, blk 43, por 45, dr 3480 ft. E. H. East, Tr.'s F. M. Carter 1, blk 19, Retama sub, Del Tule gr, coring 1032 ft. Earl D. Hankamer et al's Frank Rabb 1, Laguna Seca League, td 125 ft. Ernest Powell's George A. Moore 1, por 42, coring 1800 ft. E. A. Showers et al's Brock & Showers 1, lot 11, blk 18, por 79, dr 4140 ft. Union Sulphur Co.'s Am. Rio Grande Land & Irr. Co. 3, lot 2082, blk 86, N. Capisallo Dist., Llano Grande gr, dr 7225 ft.

JACKSON COUNTY — Shell Pet. Corp.'s McCrory 1, sec 15, Morris & Cummings sur, dr 4235 ft.

JIM HOGG COUNTY—French Oil Co.'s Pena 1, blks 41 and 42, share 2, El Peyote gr, sur 574, dr 200 ft. Miller et al's Yeager 1, blk 6, sur 20, dr 2580 ft. Edmiston et al's (John Norwood et al) C. W. Hellen 1, sec 48, prep to dd fr 1338 ft. Sun Oil Co.'s Weil 1, sur 13, San Domingo de Abajo gr, dr 3650 ft, sh.

JIM WELLS COUNTY—Charles Evans et al's Cristler 1, sec 41, I&GN sur, coring 3250 ft. O. W. Killam's W. D. Wade 4, blk D. S. A. Agua Dulce sur, td 4850 ft, pb and recore 4000 ft sand. Magnolia Pet. Co.'s A. A. Seeligson 6, V. Canale sur No. 218, testing 3490 ft.

KERR COUNTY—Jeff Love & Eastland Oil Co.'s Jeff Love 5-E, J. Martinez sur, sec 1594, dr 4700 ft.

KARNES COUNTY—Harvey & Henderson's Paul Jauer 1, A. Borscheimer sur, mir. H. A. Pagenkopf's McAda 1, C. Martinez sur, coring Pettus sand 2518 ft, dry, top Jackson 1310 ft, top Hockleyensis 1650 ft. E. L. Smith Oil Co.'s J. E. Steed 1, B&B sur No. 23 and 24, dr 1750 ft.

KLEBERG COUNTY—Clymore Production Co.'s (Ryals & Bartlett) Flato 2, sec 40, K. T. & I. sur, rd. Fidelity Exploration Synd.'s Kivlin 1, 150 ft sl and wl lot 4, blk 39, KT&I sur, ru. Parr & Ponder's Sam Michalk et al 1, lot 5, blk 37, KT&I sur, 5 mi se Kingsville, dr 810 ft, sands 348-54 ft, and 670-76 ft, both show gas.

LA SALLE COUNTY — C. W. Beck's Rancho Feliz 1, sd 1305 ft.

LAVACA COUNTY—L. A. Douglas 1, M. Mitchell sur, lcn, wor.

LIVE OAK COUNTY—Baugh & McMil-

lan's Walton & Campbell 1, D. R. Fant sur, install new boiler 3214 ft, to dd. Brunson et al's Nichols 1, Ayers sur, dr 1450 ft. Henderson Coquat et al's Sartain 1, 1320 ft sl and wl of sec 43, Simmon sub, 3 mi sw Simmons City, dr 900 ft, sand 865-69 ft, show o&sw. Lion Oil Ref. Co.'s P. E. McNeill Est 4, blk 9, GH&H sur No. 199, dr 4190 ft. Rowan & Hope, Inc.'s L. R. George 1, John Ely sur, dr 200 ft below sur csg. Smith & Storey's Frederick 1, Jane Curry sur, el 104 ft, top Hockleyensis 4155 ft, top Pettus 4980 ft, Yegua sand 5208-17 ft, show excellent saturation running 5 3/16 inch csg. J. O. Whittington et al's Little 1, M. M. Shipp sur, dr below old td 5314 ft.

McMULLEN COUNTY—Howeth & Swiger's Rhodes Ranch 1, sec 22, M. F. Lowe sur, rd and sd, wait completion of title work before spudding. Lowe's Fee 2 (dr by Winters) C sec 2, blk 4, el 347 ft, Mirando sand 479-532 ft, abnd 1067 ft; Lowe's Fee 2 (salt) ne sec 2, blk 1, el 297 ft, Mirando sand 569-76 ft, comp as fresh water well. Points et al's W. Fahler 1, Pittuck sur, sd 650 ft.

MEDINA COUNTY — Lynd & Hepler's Mary Ann Jungmann 1, N. B. Rogers sur, dr 1235 ft.

MILAM COUNTY — Second National Oil Co.'s B. P. Ward 2, L. Taylor sur, set 60 ft sur csg, sd.

NUECES COUNTY—A. F. Holliday's Stillwell 2, 330 ft fr easterly west 1 and 629 ft nl 62.5 ac tr, blk 31, Sheppard Farm Lots sub, lcn. Magnolia Pet. Co.'s S. Page 1, Kinney sur No. 586, sec 8, td 5259 ft, pb 4080 ft, testing. Southern Minerals Corp.'s Ocker 4, sec 8, coring 4885 ft. J. K. Sutton et al's J. Zaragin 3, Sheppard Farm Lots No. 5, CEPI&M sur, dr 3000 ft. Texon Oil & Royalty Co.'s Buckholt 1, J. Ward sur, sp.

REFUGIO COUNTY—Humble O&R Co.'s Mrs. M. M. Marberry 1, J. Dunn sur, dr 1062 ft. Magnolia Pet. Co.'s Mattie Wood 1, S. Turner sur, dr 4490 ft. Quintana Pet. Corp.'s Tom O'Connor 2-B, M. L. White sur, dr 9150 ft.

SAN PATRICIO COUNTY — Heep Oil Corp.'s Welder 1-B, Portillo sur, td 5910 ft, pb 5454 ft, blowing to clean. Humble O&R Co.'s Welder 1, lot 4, A&O sub, Villareal gr, se 6382 ft. A. E. Masterson et al's W. A. Wurzbach 1, C. C. Hornsby sur, dr 725 ft. Plymouth Oil Co.'s Welder 3-A, Portillo sur, sp and set 16 in sur csg, wocs; Welder 1-C, sec 49, re-sub of Welder ranch, sd 4500 ft for rep. Stanolind O& GCo.'s J. J. McMillan 1, lot 12, Fulton Pasture sub, P. Fitzsimmons sur, dr 5215 ft.

STARR COUNTY—C. R. Borah et al's A. Guerra 1, share 6, San Jose gr, sd 2750 ft. John H. Clopton's Roos et al 1, por 92, td 4334 ft, dr 4310 ft in sdtr hole; D. L. Tijerina 1, block 15, share 14-C, porcion 80, td 1750 ft, move in larger rig. Conroe Drilling Company's Guerra 1, block 35, J. N. Crawford sub, porcion 56, td 2206 ft, pb and sdtr 1000 ft. Conway & Emanuel's Starr County Cattle Co. 1, blk 57, Jeffries Lambeth sub, por 89, sd 2711 ft. Crawford's Hicks & Phelps 1, Pedernal gr, td 1617 ft, pb 1200 ft, now sd. G. K. Curry's Kelsey Bass 1, sur 8, por 75-76-77, coring 1440 ft. Goodwin & Zimmerman's N. Pena 1, sh 80, por 81, dr 1475 ft. L. H. Henry et al's Hinojosa 1, 160 ft sl and wl, tr 15, share 59, por 75, lcn. W. F. Lacy et al's G. M. Abney 1, por 99, ru. Lester & Duffield, Inc. and R. H. Vice et al's E. B. Carruth 1, sh 1-B, por 91-92, td 4016 ft, pb and sdtr, dr to 2908 ft, flow 3,000,000 cu ft gas, spray abt 2 bbls oil per day, not fully completed. Merren, Johnson & Bond's Starr County Cattle Co. 4, blk 24, td 4213 ft, pb 2600 ft, to sdtr and dr to sand 2730-54 ft. Mitchell et al's R. G. Salinas 1, sh 39, por 80, dr 900 ft. Texas Royalty & Investment Co.'s G. B. Welch 1, Pedernal gr, dk. E. B. VanHuss et al's Garcia Land and Cattle Co. 1, por 100, dr below 2900 ft.

VICTORIA COUNTY — Moore & Ahern's Henderson & Pickering 1, W. Rupley sur, dr 4742 ft. The Texas Co.'s A. M. McFaddin 9, 150 ft sel, 6100 ft nel of J. M. Rine sur, 1840 ft n of No. 2 in McFaddin dist, lcn.

WEBB COUNTY—Carolina Texas Oil Company's Barnhart 1, 1590 ft nl, 200 ft el sec 262, de la Garza sur, Carolina-Texas area, td 2174 ft, ow dd, now ru. Gates Ranch Oil Co.'s Gates 6, sur 63, dr 700 ft. O. W. Killam's A. M. Bruni 1-A, blk 55, Albercas field, td 2352 ft, perf 2113 ft, testing. Frank McMillin's A. M. Bruni 1, sec 77, dr 3350 ft.

WILLACY COUNTY — South Texas Dec Co.'s F. Armendiez 1, Little Share 4, dr 5125 ft.

WILLIAMSON COUNTY—Gault & Mims' Seggern 1, John Bevil sur, dr 650 ft. G. L. Rowsey, Tr.'s H. Hartman 1, H. White sur, east of Byersville field, ru.

WILSON COUNTY — Universal Oil Co.'s Burney 1, at Floresville, ru.

ZAPATA COUNTY—Bollmering et al's A. M. Bruni 1, 5815 ft nwl, 2785 ft nel of Borrocito Pasture, Borrego Grant, dr 250 ft. Danvers & Harrison's N. J. Vela 1, blk 7, Vela sub, por 29, coring 2260 ft. O. W. Killam's A. M. Bruni 2, Borrocito Pasture, J. V. Borrego gr, td 2180 ft, pb and test upper sands. Joe Palmer's J. M. G. Martinez 1, blk 27, sur 434, dr 1480 ft.

TEXAS GULF COAST

ANGELINA COUNTY—Coston & Howard's Penn 1, 8 mi w of Lufkin, J. Watson sur, spud and sd. Leetex Oil Co.'s A. H. Geisler 1, 1 mi nw of Lay, B. J. Thompson sur, dk. Koch & Duffey's L. W. Alberry 1, near Diboll, J. A. Prado sur, standing at 2020 ft. E. B. LaRue's W. D. Ivey 1, near Huntington, Scarborough sur, dr shale 1668 ft. Pioneer Exploration Co.'s S. L. & B. L. Huffman 1, 6 mi ne of Lufkin, S. Donegan sur, dk.

AUSTIN COUNTY — Arkansas Fuel Co.'s Otto Huedner 1, 5 mi e of New Ulm. Renke Stolze sur, ru. John C. Crossman et al's Corp. of San Felipe 1, 4½ mi e of Sealy, San Felipe de Austin 5 League, dk.

BRAZORIA COUNTY — Amerada Pet. Corp.'s Houston Farms Dev. Co. 1, s of Liverpool, L. G. Bachelder sur, pb 6550 ft, woc. The Texas Co.'s Freeport Sulphur Co. 1, 2500 ft e of Canal, nwc of S. F. Austin sur, in Areola sur, set 13⅜ in csg 1530 ft, woc.

BURLESON COUNTY—Frank Krall, Jr.'s F. Krall 1, 6 mi e of Deanville, Cox sur, dr shale 1826 ft.

CHAMBERS COUNTY—Humble O&R Co.'s Clark 1, Anahuac, H&TC sur, sec 57, ru. Middleton 1, same area, sec 64, dk.

FT. BEND COUNTY—Turnbull & Irwin's Hermann Hospital 1, e of Richmond, J. S. Cartwright sur, abd 6001 ft.

GRIMES COUNTY—W. B. Roan et al's G. W. Sealy 1, 1½ mi sw of Kellum Springs, B. F. Smith sur, dr shale 2590 ft.

HARDIN COUNTY—Jack Frazier's Sternenburg 1, 4 mi nw of Kountz, J. Pearson sur, dk.

HARRIS COUNTY—Hill & Hill's C. R. Wharton 1, 2½ mi w of Fairbanks, W. C. R. R. sur, sec 5, preparing to perforate csg, td 7057 ft. Johnson & Johnson's Fee Land 1, s Houston, H. T. & B. sur, spudded. W. U. Paul's House 1, 100 ft n of House 1, M. Magruda sur, to perforate csg, td 7765 ft. T. S. & F. Oil Co.'s J. B. Hines 1, 1½ mi sw of Lynchburg, A. McCormick sur, td 3524 ft, flowing brackish water. West Prod. Co.'s O. P. Woodburn 1, Genoa, A. Whitlock sur, dk.

JASPER COUNTY—Republic Prod. Co.'s Sabine Tram Co. 1, ne of Buna, H. & T. C. sur, sec 71, dr lime 4570 ft.

LIBERTY COUNTY—Jack Frazier's Lynott Buffon 1, n of Hardin, J. Robeson sur, ru; Lynott Buffon 2, 7500 ft e of Buffon 1, J. Robeson sur, lcn. Liberty Independent Oil Co.'s J. M. Neal 1, S. Strong sur, dr shale 3815 ft.

MATAGORDA COUNTY — H. M. Smith's Wadsworth 1, Mad Island prospect, S. R. Fisher sur, woc 5626 ft.

MONTGOMERY COUNTY—W. C. Keeble's T. S. Foster 1, J. M. De La Garza sur, dr shale 3024 ft. E. M. Compton's J. Bennett 1, F. B. Wheeler sur, coring 3383 ft.

POLK COUNTY—Smith & Thompson et al's E. Haynes 1, e of Leggett, J. Whitmore sur, dr 2806 ft. Kirby Pet. Co.'s Kirby Lbr. Co. 1, T. F. Pinckney sur, dr shale 1900 ft.

WALKER COUNTY—S. E. Grey's C. Weinzell 1, 1½ mi se of Riverside, J. J. Porter sur, dr shale 2393 ft.

WASHINGTON COUNTY—Arkansas Fuel Oil Co.'s A. Witscharke 1, nw of Burton, J. D. Miller sur, abd 4050 ft.

WHARTON COUNTY — The Texas Co.'s Pierce Estate 1, se of Pierce, I&GN sur, sec 38, dr shale 5565 ft.

SOUTH LOUISIANA

ACADIA PARISH—Humble's Rice Milling Co. 1, s of Crowley field, sec 27-10s-2e, dr shale 9139 ft. Woodley Pet. Co.'s Dr. Newman 1, Churchpoint, sec 24-7s-1e, dr shale 6898 ft.

CALCASIEU PARISH—Nichols McCaleb's Cray 1, 3 mi nw of Starks, sec 22-8s-13w, sd for repairs 868 ft. Gulf Refining Co.'s W. H. Stark 1, 6 mi s of Vinton, sec 26-11s-12w, abd 8556 ft.

CAMERON PARISH—The Texas Co.'s Jessen 1, s of Calcasieu Lake, sec 24-14s-10w, dr blue shale 8560 ft.

EAST FELICIANA PARISH — Thompson Creek Oil Co.'s Fanny Noland 1, e bank of Thompson Creek, sec 70-1s-1w, dr shale 1520 ft.

IBERIA PARISH—The Texas Co.'s State Fausse Point 1, s flank of dome, sec 35-11s-8e, dk.

JEFFERSON PARISH—Lincoln Oil Co.'s Rigaud 1, Grand Island, sec 28-21s-25e, dr shale 5820 ft.

JEFFERSON DAVIS PARISH—The Texas Co.'s Bayou St. Denis 1, 6 mi se of Lafitte, sec 19-17s-24e, coring 8090 ft. Strake Oil Corp.'s Calcasieu Bank 1, 3 mi sw of Woodlawn, sec 12-9s-6w, trying to sdtr 7920 ft.

PLAQUEMINES PARISH—Southern Sulphur Co.'s State Bay Adams 1, sec 23-20s-28e, dr shale 1410 ft.

ST. MARTIN PARISH—The Texas Co.'s State Blum Bob 1, 3 mi ne of Henderson, sec 9-8s-7e, dr shale 4846 ft.

ST. MARY PARISH — Edwards Drilling Co.'s Chetemaches 1, near Charenton, sec 34-13s-9e, coring 8067 ft.

NORTH LOUISIANA

BIENVILLE PARISH — Saline Drilling Co.'s Pardee 1, ne ne 27-14n-6w, dr 3660 ft broken lime.

BOSSIER PARISH—W. A. Kirklin, Tr.'s Garrett & McKellar 1, se nw nw 3-21n-13w, dr 1500 ft. Plain Dealing Synd.'s S. H. Bolinger Lbr. Co. A-1, sw se nw 31-23n-13w, dk. Scott & Howard's Sherrill 1, nw sw 13-18n-12w, ru and sd. L. R. Skidmore's Davis 1, se se 12-18n-13w, sd 1150 ft.

CADDO PARISH—Ed Bailey et al's Hartzo 1, ne nw 28-22n-15w, sd 1230 ft. W. T. Bell et al's Bostick 1, sw sw 12-22n-16w, claim so, bailing, td 2754 ft. Louanna O&G Co.'s Noah Moore 1, ne ne 8-18n-16e, elev 268 ft, dk.

CATAHOULA PARISH—Phillipi et al's La. Cent. Lbr. Co. 1, nw se 2-9n-6e, blew out making est 5 to 20 mil ft gas while co at 936 ft, to pb, td 3016 ft.

CLAIBORNE PARISH—K. C. Bundy's J. K. King 1, 12-21n-7w, dk. J. C. King et al's Odis Webb 1, nw ne 21-21n-8w, sd 1899 ft sandy shale. E. T. Oakes et al's Patton Est. 1, ne ne 1-20n-5w, rur.

DE SOTO PARISH—E. B. Bird et al's A. D. Johns, Jr. 1, se nw 20-14n-16w, 10-in csg 40 ft, elev 290 ft, top Nacatosh 1229 ft, claim so&g 1229 ft, Saratoga chalk 1410-65 ft, top Annona chalk 1595 ft, dr chalk 1800 ft. Century Oil & Drlg. Co.'s J. M. Norton 1, sw se 27-11n-14w, tested est 4 mil ft gas and show sw after setting 6⅝ in csg 2810 ft, arr run tub with pckr, td 2825 ft. G. O. Collins et al's J. H. Riggs 1, ne sw 21-14n-13w, wocs 10-in csg 45 ft. E. L. Foster et al's Youngblood 1, ne ne 9-11n-14w, dr 2665 ft. P. G. Frailey et al's J. E. Stell 1, 5-12n-16w, rur. Hester et al's Alston 1-A, ne sw 11-11n-16w, tested sw in ds test 2565-2600 ft, arr pb, td 2600 ft. J. T. McCormick et al's Harris 1, sw se 11-12n-14w, mim. Ramsey-DeSoto Oil Co.'s J. W. Ramsey 1, se nw 36-11n-11w, sd 210 ft.

EAST CARROLL PARISH—Century Oil & Drlg. Corp.'s Olivedell Pltg. Co. 1, 56-21n-12e, sd 170 ft to complete rur.

MADISON PARISH—Frazier et al's Frazier 1, nw se se 23-17n-10e, spd dr 210 ft. Southern Land & Expl. Co.'s Deltic Invest. Co. 1, nw nw 1-17n-12e, lcn.

NATCHITOCHES PARISH—Clyde Creighton's Friedman Est. 1, swc 52-7n-6w, sd 2935 ft. Edwards & Turner's Prudential Life Ins. Co. 1, nw nw 26-10n-6w, dk. Leslie Prod. Co.'s Tom Moffitt 1, se nw 19-10n-10w, lcn. Roy Raines et al's Fee 1, sw sw 28-9n-10w, fsg ds td 3660 ft. B. E. Taylor's De Blieux 1, 83-10n-7w, rur.

RAPIDES PARISH—S. J. Taylor's Bentley

Lbr. Co. 1, 40-5n-1w, elev 108 ft, base Jackson 2175 ft, base Minden 3040 ft, 2300 ft drill pipe recovered, going over pipe with 7-in OD pipe, td 4465 ft, Wilcox shale.

RED RIVER PARISH—Sterling O&R Co.'s Long-Bell Lbr. Co. 1, se ne se 19-13n-9w, sr, td 2828 ft.

SABINE PARISH—M. T. Hines' J. B. Hill 1, sw ne 4-6n-11w, dr 1455 ft. Laurel Pet. Co.'s Long-Bell Lbr. Co. 1, sw sw 14-8n-14w, spd cemtd 10-in csg 56 ft. Lawson, Leavell & Bryant's Whitney Corp. 1, 5-9n-13w, pb to test sg at 3084 ft, and so at 3196 ft, td 3409 ft. Whitehurst et al's Logan Oil Co. 1, nw ne nw 3-9n-13w, pumping wo gauge, td 1956 ft.

WEBSTER PARISH—Virgil Likens' E. L. Stewart 1, nw nw 23-18n-10w, spd dr 550 ft.

ARKANSAS

ARKANSAS COUNTY—Grand Prairie Dev. Co.'s Fischer 1, nw ne nw 6-6s-4e, dr 3495 ft.

ASHLEY COUNTY—Glen E. McFadin et al's Bovine Farms 1, ne ne 1-18-8w, dr 2520 ft hd Midway black shale.

COLUMBIA COUNTY — Southern States Gas Co.'s Pine Woods Lbr. Co. 1, sw ne nw 10-20-22, wocs 10-in csg 200 ft.

LA FAYETTE COUNTY—W. H. Harvey's A. M. Allen 2, se sw 18-19-24, dr 2750 ft. R. F. Allen 1, ne se sw 13-19-25, dk. S. H. Riggs et al's Jas. Dubose 1, se nw 35-15-24, sd 2390 ft. Transportation Pet. Co.'s Red River Lbr. Co. 1, sw sw 26-19-25, elev 250 ft, top Nacatosh 1804 ft, claim so&g in Buck Range sand (Ozan) 2790-2812 ft, base green sand 2850 ft, dr 2962 ft black shale (5000 ft test).

LONOKE COUNTY—J. C. Strahan's Hardin 1, nw nw 18-2s-7w, fsg, td 2323 ft.

MILLER COUNTY—C. J. Hodges et al's Commercial Nat. Bank 1, sw ne se 30-17-28, (formerly Beverly Oil Co.'s test), dk. King Oil Corp.'s E. G. Anderson 1, nw sw ne 16-14-27, sd repr rig 1723 ft. C. V. Lenz's Dale 6, 24-15-26, dr 2850 ft. Lee Timberlake's Frost Est. 1, sw sw se 27-15-26, dr 2890 ft.

OUACHITA COUNTY—S. J. Carnes' Caldwell 1, nw nw 12-14-19, dr 2110 ft. P. Highsmith 1, nw ne nw spd and sd. T. J. Gaughan et al's M. Bragg 3, sw ne se 25-13-18, spd cemtd 10-in csg 81 ft. Kraft Oil Corp.'s Rath & Cartier 1, sw sw sw 32-13-17, dr 1830 ft.

UNION COUNTY—Gulf Ref. Co.'s Werner Lbr. Co. 49, sw nw sw 5-16-16, 10-in csg 2293 ft, dr 2750 ft (8000 ft test). H. L. Hunt, Inc.'s E. F. Gregory 15, 10-17-14, cored anhydrite and red shale 5796-5868 ft arr set csg (7000 ft test). Mrs. R. K. Jones' J. Davis 1, nw nw 28-16-14, wosr, td 2758 ft. Joe Modisett et al's D. G. Sturdivant 1, se se 6-18-13, tested est 2 mil ft gas 2536 ft, dr 3345 ft. E. O. Olds' Telford 1, nw nw 35-17-15, wosr, td 2211 ft. Reuter Oil Co., Inc.'s Kinard 1, nw se nw 32-18-14, co td 2196 ft; Vines 2, nw sw se 29-18-14, shot well, wosr, td 2216 ft. Urbana-Union Oil Co.'s Union Sawmill 1, nw sw 34-17-15, spd cemtd 10-in csg 150 ft.

MISSISSIPPI

CLARKE COUNTY—L. Beckwith et al's Long-Bell Lbr. Co. 1, ne sw se 10-2n-16e, elev 378 ft, dk.

JONES COUNTY—Snow-Black Pet. Co.'s Fox 1, se se sw 30-7n-12w, dr 1873 ft.

LAUDERDALE COUNTY — Dalton Dev. Co.'s Bounds 1, nw ne se 3-6n-15e, dr 1405 ft.

MONROE COUNTY—P. J. McAlpine et al's Crook 1, ne ne 4-13s-18w, elev 413.6 ft, top Mississippi red and green shale 2163 ft, recementd 6⅝ csg 1880 ft, td 2259 ft, green shale.

MONTGOMERY COUNTY—D. C. Schaffer et al's Fee not given 31-19-7; lcn.

STONE COUNTY—Gulf Ref. Co.'s Dantzler Lbr. Co. 7, se se 36-3s-11w, dr 2873 ft.

WARREN COUNTY—Harry W. Elliott's R. L. Parker 2, nw nw 14-14n-1e, core 1590 ft.

WINSTON COUNTY—Jack Vale's Moody 1, nw sw 3-13n-14e, elev 540 ft, top Midway chalk 857 ft, sd installing another boiler, td 864 ft chalk.

ALABAMA

COVINGTON COUNTY—Geometer Prod. Co.'s A. B. Culbreth 1, sw sw ne 8-2n-14e, sr td 3786 ft.

HOUSTON COUNTY — Rice O&G Co.'s Oakley Est. 1, sw nw sw 9-3n-29e, co to deepen, td 2506 ft.

PIKE COUNTY — Alabama Drilling Co.'s Faulk 1, nw nw 31-11n-21e, ru and sd.

FLORIDA

HILLSBOROUGH COUNTY — Southern Pet. Co.'s Mizell & Williams 1, 4-32s-21e, elev 120 ft, sd for csg 2100 ft.

LAKE COUNTY—Oil Dev. Co. of Fla.'s Gulf Expl. Co. 1, se se 17-24s-25e, skidding over for new hole.

PINELLAS COUNTY — Heber Smith's Brown 1, ne sw 11-32s-16e, wocs sur csg 70 ft.

MICHIGAN

MIDLAND COUNTY — Goll-Graves-Mechling's Oviatt 1, 16n-2e, sec 24, sd 950 ft. Foster and Wicklund's Neal 1, 16n-2w, sec 13, Dundee 3823 ft, dr 3895 ft. Howard Patterson's Haskins 1, 13n-2e, sec 26, csg 3-in at 3725 ft, so & w.

ISABELLA COUNTY — United Driller's Vandercook 1, 15n-3w, sec 24, rig. Pure Oil Co's Baker 1, 13n-5w, sec 15, pb from 4253 ft to 3125 ft, swabbed 10 bbls oil, will acidize. W. J. Bernier's Webber 1, 15n-5w, sec 22, rig.

MONTCALM COUNTY — J. W. Leonard's Durbin 1, 10n-5w, sec 11, Dundee 3189 ft, td 3197 ft, swabbed 30 barrels oil, will acidize. Golden Oil Co's Steffensen 1, 10n-8w, sec 5, dr 2900 ft. L. G. Thompson's Knapp 1, 12n-9w, sec 17, sp. L. E. Duvall's Eiknorch 1, 12n-10w, sec 13, sd 1343 ft.

MECOSTA COUNTY—Jetter Oil Co's Parsley 1, 14n-10w, sec 19, sd 600 ft. Jasmid Oil Corp's Coopersville Bank 1, 13n-10w, sec 22, sd 850 ft.

GLADWIN COUNTY — M. F. Whitehill's Spicer 1, 17n-2w, sec 11, dr 400 ft. Sun Oil Co's Hines 1, 17n-1w, sec 31, dr 1600 ft. Beaverton Oil Co's Ross 1, 17n-1w, sec 7, dr 640 ft.

LIVINGSTON COUNTY—Talbot Oil Co's McPherson 1, 3n-4e, sec 35, pb from 5957 to 3943 ft; will shoot.

CLARE COUNTY—Sun Oil Co's Becker 1, 18n-3w, sec 2, dr 160 ft.

GRATIOT COUNTY—Chas. Weller's Baker 1, 9n-3w, sec 9, dr 2850 ft.

ARENAC COUNTY—McClanahan Oil Co's Heath Ranch 1, 19n-3e, sec 31, dr 2250 ft.

WEXFORD COUNTY—M. J. Ingold's Webb 1, 22n-9w, sec 13, dr 300 ft.

ROSCOMMON COUNTY—Black Diamond Oil Synd's Vaughan 1, 24n-4w, sec 28, dr 3330 ft.

OSCEOLA COUNTY—Smith Pet Co's Arntz 1, 18n-10w-20, rig.

Forgings

Kropp Forge Company, Chicago, has issued a bulletin describing the heat treated forgings manufactured by the company. It will be mailed upon request.

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NEWS *from the* *Industry's* EQUIPMENT MAKERS

The Medart Company Appoints Two New Distributing Agents

The Medart Company, St. Louis, Mo., has appointed Slip-Not Belting Corporation, Kingsport, Tennessee, as distributor for The Medart line of transmission equipment in that area.

The company also appointed the San Antonio Machine & Supply Company, with offices in San Antonio, Waco and Corpus Christi, as distributor in that area.

C. L. Clover Joins Gulf Coast Machine & Supply Company

C. L. "Cotton" Clover, who has been with The Continental Supply Company for the past six years in the capacity of store manager at Big Springs, Texas, and Hobbs, New Mexico, has joined the sales staff of Gulf Coast Machine & Supply Company. He will handle the company's sales in the Louisiana Gulf Coast area, making his headquarters at Lake Charles.

Reading Iron Company Announces Changes

W. S. Shiffer, general manager of sales of Reading Iron Company, announced today that S. H. Blackwood, formerly assistant district sales representative in the New York territory has been made district sales representative in southern territory with headquarters at 1104 Continental Building, Baltimore, Maryland. Mr. Blackwood takes the position held for many years by W. J. White, who recently resigned. W. N. Johnson has been appointed as salesman in the New York territory.

United States Rubber Products, Inc., Appoints Sales Engineer

W. M. Ballew, manager mechanical goods sales, United States Rubber Products, Inc., Kansas City, announces the appointment of William O. Kupper, who will cover the Oklahoma oil fields as sales engineer, assisting Wesley Batten of Tulsa, Oklahoma, supervisor of oil field sales.

In addition to a technical training, Mr. Kupper has a wide acquaintance in the oil fields, having previously been employed by the Pennsylvania Pump company, and the Alemite Sales Company.

Announcement also is made of the appointment of I. M. Caldwell as technical sales engineer to cover the Kansas oil fields. He will have headquarters in Wichita, Kansas. Mr. Caldwell received his mechanical engineering degree from Oklahoma A. & M. College. He enters sales engineering after practical experience in the refinery and production departments of the Tide Water Oil Company.

Portable Rig Company, manufacturers of drilling equipment, and distributors in Texas for Waukesha Motor Company, held a semi-annual sales conference early in March at the company's headquarters in Houston. The group shown above represents the company's sales and service force in Texas.

ROBERT F. MAHER

Chapman Valve Opens Houston District Office

The Chapman Valve Manufacturing Company, Indian Orchard, Mass., has opened a branch sales office in Houston, to serve the Gulf Coast region, in charge of Robert F. Maher, with offices at 1507 Petroleum Building. Mr. Maher will handle sales on Chapman Valves in this district to both the refining and production branches of the industry.

Williamsport Wire Rope Company Moves Houston Warehouse

After having been located at 1516 Chestnut Street, Houston, since 1926, Williamsport Wire Rope Company has moved its office and warehouse to 1 North Milby Street. The company moved into its new location April 1.

Several recent changes have been made in the personnel of the Houston office. Raymond Ford continues as district sales manager, but Charles F. Phelps, formerly Houston warehouseman, was made salesman in the Shreveport and East Texas district. B. C. Brooking replaced Phelps as warehouseman. Mrs. Anna Cummings, who formerly took care of the office, has been replaced by Laurence Rogers.

Sam L. Tennant, who for the past year has been in the Houston district in the dual capacity of service and sales, continues in this work.

PAUL B. HANSEN and J. P. Perry, drillers employed by Standard Oil Company of Venezuela, returned to the States recently.

Squeaks *from the* BULL WHEEL

Here is one from Eric G. Schroeder of the Kibele Manufacturing Company:

A darky lay quivering under a pile of brush while a mob lynched another of his race, shooting the hapless victim full of holes, mutilating the body and finally stringing it up to a tree. Someone spied the fugitive under the brush pile, hauled him out and pointed sternly to the form swaying at the end of the rope.

"Do you think that fellow got what was coming to him?" asked one of the mobsters from the cringing darky.

"Boss," he replied, "I thinks he done got off light!"

A rather stout school ma'am was instructing her young pupils about birds and their habits.

"Now," she said, "at home I have a canary, and it can do something which I cannot do. I wonder if any of you know just what that thing is. All right, Eric, do you know?"

"Yes'm," replied small Eric, "I know. It can take a bath in a saucer."

Uncle Joe, an old negro, had just paid the last installment on a small farm.

"I'll get your deed made out right away, Uncle Joe," the agent said.

"If it's all the same to you, boss, I'd much rather have a mortgage," the old darkey replied.

Somewhat surprised, the agent suggested perhaps Uncle Joe didn't know the difference between a mortgage and a deed.

"Well, maybe not," said the old man reminiscently, "but I owned a small farm once to which I had a deed, and de Fust National Bank had a mortgage, and de bank got mah farm."

Medical witnesses would testify in this court that my unfortunate client is suffering from kleptomania. Your Honor, you know what this is.

Yes, it's a disease the people pay me to cure.

"Was the boss annoyed when you told him I was leaving next week?"

"Yes, he thought it was this week."

"Porter!"

"Yes, madam, what is it you wish?"

"I just found two strange men in my apartment, and I want you to put one of them out."

Forgetful Husband (to friend): "I want you to help me. I promised to meet my wife at one o'clock for luncheon, and I can't remember where. Would you mind ringing her up at our house and asking her where I am likely to be about that time?—Contact.

And will the operation be dangerous, doctor?"

Nonsense; you couldn't buy a dangerous operation for $40."

"I've just asked Mrs. Smith 'ow 'er ole man's gettin' on, an' orl 'er said, woz—'E's out of order.' Does er mean 'e's bad?"

"No, 'e ain't bad. She's got that sayin' orf them broken slot misheens. It's swank, an' means that e' won't work."

"Just where did the automobile truck hit you?" asked the lawyer.

"Well," said the injured young lady, "If I had been wearing a license plate it would have been badly damaged."

"What did your last boss say when you'd take more than an hour for lunch?"

He'd say, "Don't you think we'd better be getting back to the office, honey?"

A man rushed into the police station and shouted: "There's a man hanging out there in the barn!"

"Did you cut him down?" asked the cop.

"No, the d—n fool wasn't dead."

A London east-end school class was given an essay to write, and the title of the essay was, "The Advantages of Mother's Milk Over Cow's Milk." One youngster thought hard and handed the following in to the teacher:

"There are three advantages: First, it is cheaper; second, it keeps better over the week-end; third, the cat can't get at it."

Why did you leave your boarding house? I heard you had meat at every meal.

We did have meat at every meal. First it was beef, beef, beef; that was the month their old cow died. Next we had pork, pork, pork; that was the next month, when their hog died. Yesterday the landlady's father died—and I thought it was a good time to vamoose.

This lady says that you tried to speak to her at the station.

It was a mistake. I was looking for a friend's sister, whom I have never seen before, but who'd been described to me as a very handsome blonde with classic features, fine complexion, perfect figure, beautifully dressed, and—

I don't care to prosecute the gentleman. Anyone might have made the same mistake.

During the national convention at Miami, a lady is said to have become alarmed at the antics of the Legionnaires. Approaching a policeman, she said: "Can't you stop them, officer?"

"Lady," responded the officer sadly, "there's an old man in Europe who tried to do that, and now he's sawing wood in Holland."

Little Boy (calling father at office): "Hello, who is this?"

Father (recognizing voice): "The smartest man in the world."

"Pardon me, I got the wrong number."

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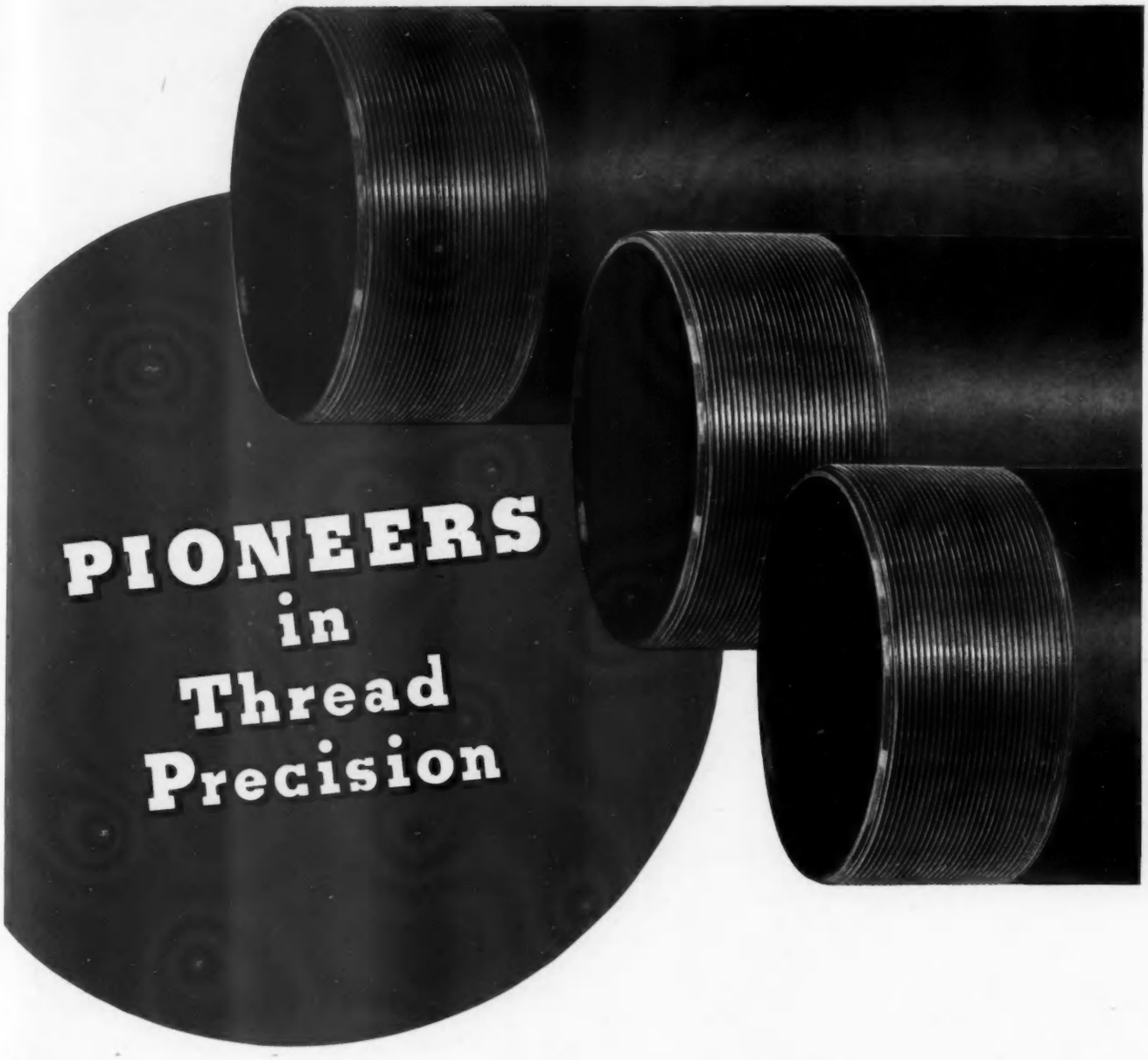

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